

# TWO LECTURES

ON THE

## DEFECTIVE ARRANGEMENTS IN LARGE TOWNS

TO SECURE THE

HEALTH AND COMFORT OF THEIR INHABITANTS:

READ BEFORE

THE HULL LITERARY AND PHILOSOPHICAL SOCIETY,

ON DECEMBER 27TH, 1842, AND JANUARY 10TH, 1843.

BY HUMPHRY SANDWICH, M.D.,

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PHYSICIANS TO THE HULL GENERAL INFIRMARY.

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TO

THE RIGHT HONOURABLE THE LORD ASHLEY

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MY LORD,

THE permission to put forth these unpretending pages under the sanction of your illustrious name, is gratifying to one, who is aware that the success of the cause of Christian philanthropy has been largely promoted by your championship.

In dedicating to your Lordship this attempt to advance the improvement of our social state, I feel assured that your parliamentary support will not be withheld from objects substantially in unison with those, which have prompted your own patriotic efforts to promote the physical and moral welfare of the working classes. I am desirous, moreover, of placing that branch of practical reform, which it falls to my lot to advocate, under your special protection, from my perfect reliance on the energy of those Protestant and evangelical principles which, in the hands of a Howard, a Wilberforce, and yourself, have achieved the most signal ameliorations.

That your Lordship's valuable life may be long spared to promote your country's welfare, is the ardent prayer and sincere wish of,

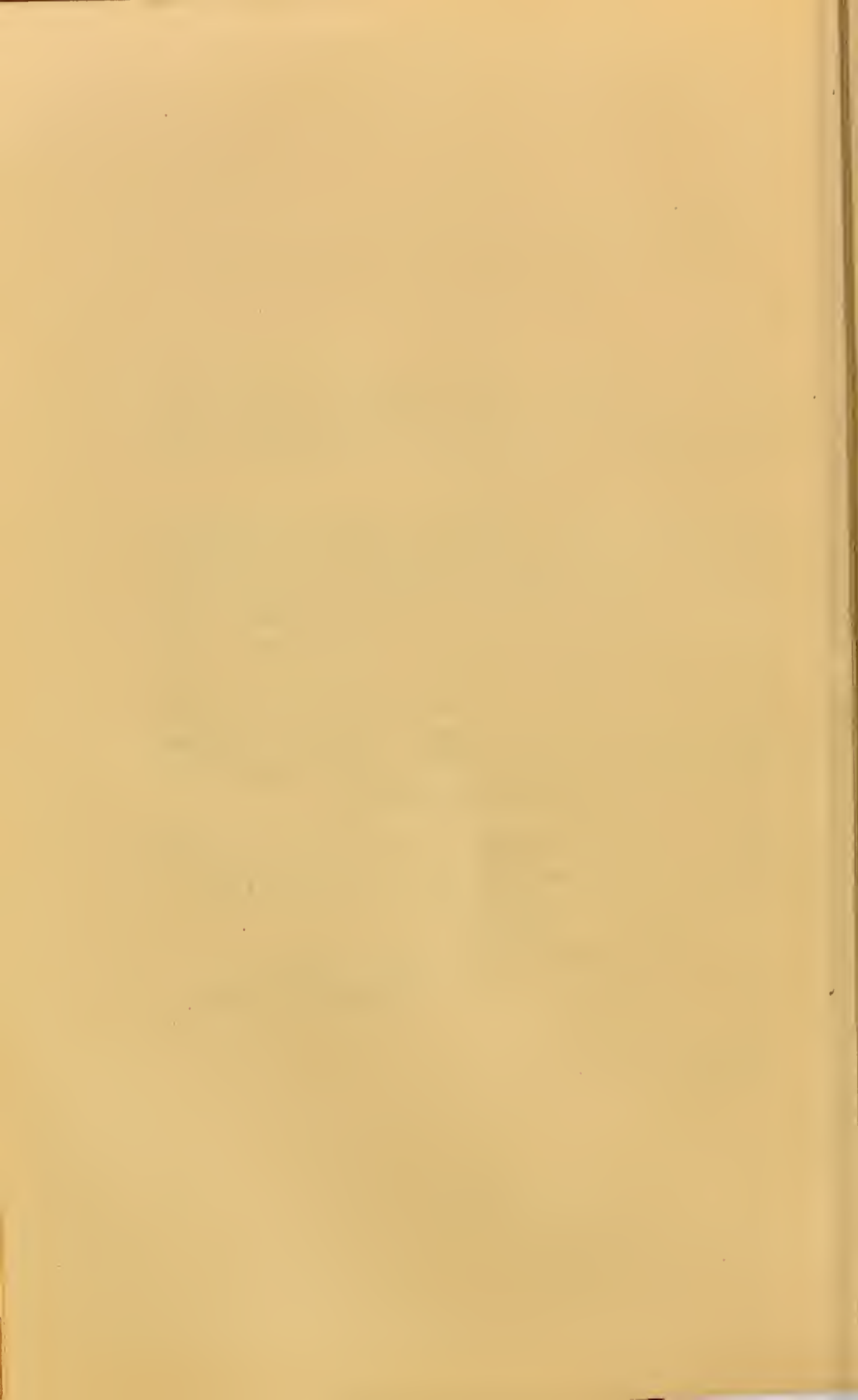
My Lord,

Your Lordship's obliged and faithful servant,

HUMPHRY SANDWITH.

1, ALBION-STREET, HULL,

*January 21st, 1843.*



ON THE  
DEFECTIVE ARRANGEMENTS IN LARGE TOWNS  
TO SECURE THE  
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LECTURE I.

READ BEFORE THE SOCIETY, DECEMBER 27TH, 1842.

THE contemplation of certain disadvantages and defects, under which the town of Hull labours, in common with most other large towns, and with the metropolis itself, though not to an equal extent, has had some share in prompting me to venture upon the discussion of a subject which, after all, possesses a general and national, rather than a merely local, interest. The causes, therefore, which I shall adduce to illustrate the evils that call for legislative interference, and the hearty co-operation of parishes or individuals, to abate or remove them, will be drawn from a variety of sources, and embrace a wide field of observation. Every philanthropist must, in the mean time, rejoice, that the subject has secured the attention of Parliament, and that the House of Commons has appointed "Select Committees on the Health of Towns," who have summoned before them competent and accomplished witnesses to speak to the real condition of the labouring classes in cities and large towns, and who state, as the general result of their inquiries, that "evils of a most extensive and afflicting nature are found to prevail, affecting the health and comfort of vast bodies of their fellow-subjects, and which might be removed or much lessened by due sanitary regulations." \*

One of the most masterly sketches of Virgil is the descrip-

\* Health of Towns Report, p. v.

tion of his hero's emotions, both when, on approaching Carthage, he .

“saw the stately towers,  
Which late were huts and shepherds' homely bowers,—  
The gates and streets,—and heard from every part  
The noise and busy concourse of the mart;” \*—

and when, on a closer inspection, he marked the variety of the citizens' labours in house-building, fortifying their city, adorning it with works of art, and providing for themselves the blessings of just laws, and a free constitution. As a comparative stranger, I, too, may be permitted to congratulate the authorities of this great commercial town on the pleasing progress which has been made in scientific and literary pursuits, in eleemosynary and educational efforts, and in consolidating the social fabric by the imperishable cement of religious principle. Nevertheless, much yet remains to be done, not in Hull only, but throughout Great Britain, by improved municipal regulations, and otherwise, to relieve the humbler classes from the pressure of those adventitious evils, which greatly aggravate the ordinary privations of their lot. Nor can there be any question, that the neglect of some sanatory provisions is a source of great dissatisfaction to the poor, with regard to those above them in authority. This fact stands on record in the evidence adduced before one of the Select Committees of the House of Commons. Thus Joseph Fletcher, Esq., in describing the feelings of the operatives of the midland districts, as in Coventry and elsewhere, asserts, that “dissatisfaction among the lowest classes of the people does not express itself in complaints of those things into which you are now investigating; but they immediately find another subject for their excited passions, and express their dissatisfaction with the constitution of the country, and the frame-work of society.” † The joint testimony of Dr. Williamson, Mr. Walker, Mr. Ellison, and Mr. James Riddall Wood, connects these exasperated feelings with the neglect of proper remedies to ameliorate their condition; and establishes the fact, that many of them “are alive to their degraded condition, and often aver, that there is one law for the rich and another for the poor.” Nothing is more easy of comprehension, than that an undefined feeling of misery may vent itself in most incorrect language, and take any shape which the turbulence of our times may impress upon it. It was thus, we are told, that “the politics of the people of Lyons, when they acted so conspicuous

\* Dryden's *Virgil*, *Æneis* I.

† *Health of Towns Report*, pp. 76, 103, 91, 135, 156.



a part in hostility to the existing dynasty of France, was attributable more to the prompting of agitators acting on the irritability of empty stomachs, than to any very decided political feeling, or thoughtfulness on the part of the people themselves.”\*

Before I adduce any instances of those varied and appalling outrages on civilization, which almost every where present themselves, I may premise that, in some of the large towns, local Acts have, I believe, been obtained, within the last few years, which have armed the authorities of those towns to accomplish something, though comparatively little, towards the removal of that enormous mass of evils, under which thousands and tens of thousands of the labouring classes groan.

The first class of abuses, to which I invite your attention, is produced by the mischievous investment of capital by grasping speculators in HOUSE-BUILDING; and our first specimen shall be from the small courts, which crowd many of the metropolitan districts, as St. Giles, Spitalfields, Whitechapel, and others. These courts are very small and narrow, the access to them being under gate-ways; in many cases, they have been larger courts originally, and afterwards built-in again with houses back to back, without any outlet behind, and only consisting of two rooms, and almost a ladder for a staircase; and those houses are occupied by an immense number of inhabitants. There are sometimes three, four, and even more beds in each room. And the majority of the working classes, in several parts of London, have only one room for the whole family both to live and sleep in.† The space between the houses averages only ten feet. Being blocked up at one end, and only having a narrow entrance by an archway, and being moreover built back to back, they scarcely admit of either the transmission of light, or the circulation of air. The want of under-ground drains to convey the filth to the common-sewers causes its accumulation in every direction. Nor is the water laid on to the houses in the poorer places. As might be expected, these secluded and detached abodes of the wretched outcasts of society are the seats of fever, as well as the haunts of crime and obscenity in their worst forms.‡ And yet this is a type of the style of building for the

\* Symons's Arts and Artisans, &c., p. 112.

† Health of Towns Report, p. 68.

‡ The revolting scenery of the demoralization which prevails in many of these courts and alleys in London, and in the “closes” of Glasgow, is too gross for delineation. The description given by Mr. Symons of the latter, and certain facts related in the evidence of J. Pennethorne, Esq., as to the former, are perfectly horrifying. *Vide* Arts and Artisans at Home and Abroad, pp. 116—120; also Health of Towns Report, p. 171.

accommodation of the poor, which more or less prevails in almost every large town in England, except perhaps Birmingham.

Dr. Lyon, in his *Medical Topography and Statistics of Manchester*,\* published ten years since, in speaking of the narrow and dirty streets of Salford, remarks, that "one of the poorest and most unhealthy districts adjoins the Bolton canal; there are likewise some confined and unwholesome situations between the main street and the river; but the spot, of all others the least friendly to health and comfort, is the old cloth-hall, situated nearly opposite the confluence of the Irk and the Irwell, but [so constructed as to be] *inaccessible to the purifying breeze, which might be expected in such a situation*. The approach to this place is by an archway from Greengate; and the visiter finds himself involved in a labyrinth of low dwellings, consisting partly of the old building, formerly used as a cloth-hall, divided into two stories by an open gallery in front, from which the upper rooms are entered, and every room being a separate tenement:—partly of a range of cottages recently built across the area, with other cottages outside of these, so as to leave a very narrow space between the several rows. A few years ago one-third of the patients, removed by a Physician of the Infirmary from Salford to the Fever-Hospital, were taken from this nursery of disease." No panoramic view, nothing short of personal inspection, would suffice to enable the mind fully to comprehend the evils of so condensed a mass of ill-ventilated dwellings. The same document adds, that "the number of private, unpaved, and consequently filthy, streets is lamentably great in Manchester. The picture drawn by Sir Walter Scott of the village of Tully-Veolan may, in part, be taken as a faithful representation of their condition: the only scavengers that enter them are dogs and swine, allowed to roam at large: and they are useful in their way, by consuming some of the offal, which is indiscriminately cast in heaps before the doors."† We are told, moreover, by Mr. Robertson, that, notwithstanding the general

\* North of England Medical and Surgical Journal, vol. i.

† Objections may be taken to a statement ten years old. Hear then the evidence of Dr. Howard in the Report of the Poor Law Commissioners just published:—"And notwithstanding all that has been done in the improvement of the streets, the number requiring paving and soughing, and into which the scavenger never enters, is still very great; for as those more central have been completed, others have been laid out in the outskirts equally without pavements and drains, and into which all the refuse, slops, and filth from the houses are unceremoniously thrown, and left there to decay and exhale their noxious vapours; so that these streets bid fair in a short time to rival their former prototypes in the interior of the town." *Vide Local Reports on the Sanatory Condition of the Labouring Population of England and Wales, 1842, p. 310.*



defectiveness of the habitations of the poor; "Manchester has no public park, or other ground where the population can walk and breathe the fresh air, and in this respect is disgracefully defective, more so perhaps than any town in the empire." In Manchester almost twelve per cent. of the working population, amounting to nearly fifteen thousand persons, live in cellars. "Many of the streets in which cases of fever are common, are so deep in mire, or so full of hollows and heaps of refuse, that the vehicle used for conveying the patients to the House of Recovery often cannot be driven along them."\*

Dr. Williamson's testimony to the ill-constructed, ill-ventilated, and filthy accommodations for the operative classes of Leeds, is to the following effect:—

Referring to one neglected and uncleansed locality, he says, "From that yard I have reason to know cases of malignant fever are continually sent to our Fever Hospital." The district called the North-East Ward, (in which out of 16,269 inhabitants, 15,399 are of the working classes,) is described as containing numerous streets, "having dangerous excavations, bad drainage, little or no sewerage, here and there pieces of stagnant water, ash-holes exposed, out-offices without doors or seats, very unsafe," &c. Similar or worse accounts are given of various other districts, detailing the evils arising from houses built in close courts, often back to back, frequently with no thorough draught of air, without any conveniences for cleanliness or decency, with no effective drainage, inspection, or system of paving or cleansing. In short, the general conclusion of the Town Council of Leeds is, "that the greater part of the town is in a most filthy condition, which demands an immediate remedy,—a remedy which does not seem attainable under any Local Act now existing, but calls for an especial enactment, which is doubtless required," they say, "not only by Leeds, but more or less, by every town in the empire."† An Act for the establishment of a new Water-works Company was obtained a few years ago: otherwise, until very recently, the water, which supplied that large town, was derived from the river Aire, a river full of impurities, receiving all the foul and excrementitious matters from the various sewers, and likewise all the impurities from the dye-works, mills, and all the various manufacturing operations. And with this horrid supply of water, Dr. Williamson assures us, that a very imperfect system of filtration was adopted. Dublin suffers at this moment from a somewhat similar cause; the supply of water on the north side of the Liffey is not only insufficient, but is derived from a very filthy

\* Local Sanatory Reports for England and Wales, p. 310, 305.

† Health of Towns Report, p. xi.

basin.\* In the city of Cork, too, according to the Physicians' Reports of Epidemic Fever in Ireland, the water that was used for the drink of the inhabitants received the sewers, and consequently the *exuvie* of those who drank the water. There is a most impure supply of water, moreover, at Rotherhithe.† Leeds is represented as having fourteen streets in so filthy a condition, that each street is at once a pond and a dunghill, never swept, never cleansed, never drained; but *all-absorbent*, in the fullest sense of that expressive epithet.‡

The construction of houses in Liverpool for the working classes, is, for the most part, as injurious to the health and comfort of their inmates, as it is possible to conceive. There are in Liverpool about two thousand four hundred courts, many of them constructed in the manner already alluded to, as rendering ventilation impossible. These courts contain an estimated population of about eighty-six thousand of the working classes; in addition to thirty-eight thousand living in cellars. Independently of this faulty construction, so injurious to the health of the inhabitants, the state of most of these courts is described as almost utterly neglected, with no under-ground sewers, and no attention to cleansing, with no inspection of any kind, and the surface-gutters frequently almost choked with filth. Dr. Duncan, who has deposed to these facts, asserts, that "fever is the great complaint of these people." Scavengers never go into the courts, because they are considered to be private property,§ and consequently they sometimes remain a whole year without being cleared out. It is a melancholy fact, that one fifth of all the working classes in the great town of Liverpool, amounting to thirty-nine thousand persons, live in seven thousand eight hundred cellars; the greater proportion of which are dark, damp, confined, ill-ventilated, and filthy. This gives exactly five individuals on the average to each cellar. But they are often more crowded than this. Dr. Duncan tells us, that "he has known thirty persons sleeping in a single cellar; and that, in some of the cellars, kept by lodging-house keepers, they merely cover the floor with straw, and allow as many persons to come as there is room for, charging them a penny per night." || In one cellar, a child in the small-pox lay alongside of several others, and within a space of ten or twelve feet square, there slept fifteen individuals. Well might a poor Irishman exclaim, that "the smell was bad enough to raise the roof off his skull!" In another cellar, in which the family resided, they had collected about three cart-loads of manure, and dwelt amidst its fumes.¶ In other

\* Health of Towns Report, p. 195, 199. † Ibid., p. 127. ‡ Ibid., p. 96.

§ Ibid., p. 144.

|| Ibid. p. 143, 147.

¶ Ibid., p. 144.

instances pigs and donkeys have been the associated inmates. Compared with these wretched abodes of humanity, the cave of the hyænas in Kirkdale was a palace ! Well may we ask, " Can a hole under ground, of from twelve to fifteen feet square, admit of ventilation so as to fit it for a human habitation ? " In truth, the damp ground-floors of unventilated cellars are so productive of rheumatic diseases,\* that they have been aptly called " regular manufactories of pauperism." What aggravates the evil, too, is, that in those districts, in which there are cellars, there is a great deal of broken ground full of pits,—the water accumulates in those pits in rainy seasons,—and they contain, besides, dead dogs and cats, and a great many offensive articles. Nevertheless this water is used for culinary purposes !† The Parliamentary Committee, on a review of the sad statements made before them respecting Liverpool, pause to observe,—" that it is painful to contemplate, in the midst of what appears an opulent, spirited, and flourishing community, such a vast multitude of our poorer fellow-subjects, the instruments by whose hands these riches were created, condemned, for no fault of their own, to the evils so justly complained of, and placed in situations where it is almost impracticable for them to preserve health or decency of deportment, or to keep themselves and their children from moral and physical contamination ; to require them to be clean, sober, cheerful, contented, under such circumstances, would be a vain and unreasonable expectation. There is no Building Act to enforce the dwellings of these workmen being properly constructed ; no Draining Act to enforce their being efficiently drained ; no general or local regulation to enforce the commonest provisions for cleanliness and comfort."‡

To whatever amount of misery the adult population of Liverpool may, on these accounts, be subjected, their children of course are equally involved in it. Besides which they suffer from certain other evils attendant on the irregular and defective attempts to educate them. " With few exceptions, the dame-schools are dark and confined ; many are damp and dirty ; more than one-half of them are used as dwelling, dormitory, and school-room ; accommodating, in many instances, a family of seven or eight persons ; above forty of them are cellars." " Of the common day-schools in the poorer districts, it is difficult to convey an adequate idea ; so close and offensive is the atmosphere in many of them, as to be intolerable to a person entering from the open air, more especially as the hour for quitting school approaches. The dimensions rarely exceed those of the

\* Health of Towns Report, p. 147.

† Ibid., p. 132.

‡ Ibid., p. ix.



dame-schools, while frequently the number of scholars is more than double. Bad as this is, it is much aggravated by filth and offensive odour arising from other causes." "There was one school in a garret up three pair of dark, broken stairs, with forty children in the compass of ten feet by nine. On a perch, forming a triangle with a corner of the room, sat a cock and two hens; under a stump-bed immediately beneath was a dog-kennel, in the occupation of three black terriers, whose barking, added to the noise of the children, and the cackling of the fowls, on the approach of a stranger, was almost deafening. There was only one small window, at which sat the master, obstructing three-fourths of the light it was capable of admitting." \*

Glasgow may finally be adduced as an example of the want of ventilation, sewerage, cleansing, and attention to the health of the poorer inhabitants.† Fever prevails to an alarming extent in consequence. "The Mortality Bill of 1837," says Dr. Cowan, "exhibits a rate of mortality inferring an intensity of misery and suffering unequalled in Britain, and not surpassed in any town we are acquainted with on the continent of Europe." The graphic statements of Mr. Symons make all this at once intelligible. "The wynds in Glasgow," he observes, "comprise a fluctuating population of fifteen thousand to thirty thousand persons. This quarter consists of a labyrinth of lanes, out of which numberless entrances lead into small courts, each with a dunghill reeking in the centre. Revolting as was the outward appearance of these places, I was little prepared for the filth and destitution within. In some of these lodging-rooms (visited at night) we found a whole lair of human beings littered on the floor, sometimes fifteen and twenty, some clothed and some naked; men, women, and children huddled promiscuously together. Their bed consisted of musty straw, intermixed with rags. There was generally little or no furniture in these places; the sole article of comfort was a fire. Thieving and prostitution constitute the main sources of the revenue of this population. No pains seem to be taken to purge this Augean pandemonium, this nucleus of crime, filth, and pestilence, in the centre of the second city of the empire. A very extensive inspection of the lowest districts of other places, both here and on the continent, never presented any thing half so bad, either in intensity of pestilence, physical and moral, or in extent proportioned to the population." There are thousands in Glasgow, who never enjoy the luxury of a bed, however mean and comfortless, and who, "if they attempted to put off their clothes, would find it

\* Health of Towns Report, p. 132.

† Ibid., pp. 61—64, 65.

difficult to resume them." In other cases women are found huddled together in bed at mid-day, covered with a bare blanket, because "others, who have on their backs all the articles of dress belonging to the party, are then out of doors in the streets."\* The children of the poor of Glasgow appear strikingly emaciated; and no wonder, when we contemplate either the parental roof, or the school where, without any play-ground for recreation, they consume most of their waking hours.

There is nothing in Lyons, Brussels, Paris, or any other town on the continent of Europe, comparable in extent of misery and degradation to Glasgow. That pestilence should ride roughshod over a population so circumstanced, was to be expected. Accordingly Mr. Baird tells us, that the sufferings of the working classes in Glasgow have been trifling indeed from all other causes, "when compared with what they have annually suffered from disease, especially of an epidemic nature."† And Mr. Chadwick adduces evidence to show, "that the mortality from fever is greater in Glasgow, Edinburgh, and Dundee than in the most crowded towns in England." Nor can we wonder, when both he and Dr. Arnott assure us, that "both the structural arrangements, and the condition of the population in Glasgow, were the worst of any they had seen in any part of Great Britain."‡

I may here add, that in many of the towns of Scotland a good supply of water is a great desideratum. Dundee, Stirling, Dunfermline, Lanark, and Arbroath are all imperfectly supplied; and many of the colliery and manufacturing districts greatly suffer from the want of this prime essential to the health and cleanliness of the labouring classes. The remark holds equally true of many towns in England; insomuch that I was not surprised by Mr. Chadwick's remark, that "no previous investigations had led him to conceive the great extent to which the labouring classes are subjected to privations, not only of water for the purposes of ablution, house-cleansing, and sewerage, but of wholesome water for drinking and culinary purposes."

No spot in England yields more forcible proofs of the want of a general SEWERAGE ACT than the suburbs of London. This defect goes far to explain the unwholesomeness of Bethnal-Green, for example. In that district, in bad seasons, the terrible scourge of fever sweeps off entire families. The dwellings of

\* Sanatory Reports of Scotland, p. 9. See also Symons, on Arts and Artisans, p. 116.

† Local Reports of the Sanatory Condition of Scotland.

‡ General Report of the Sanatory Condition of Great Britain.



the people are small ground-floor houses, each having only two rooms, the larger of which is only about *seven feet by nine*, and the height about *seven feet*; and the windows are very small. The site is close upon a marshy district, and *there is no drainage of any kind*. No wonder that in this district, more especially in Campden-gardens, fever is often generated, and becomes more than commonly fatal. Very often all the members of a family are attacked, and die one after another. During the year 1840 several entire families were swept off by it. Lamb's-fields is another locality, which is a prolific source of fever to the houses which immediately surround it. The explanation of this is easy; and is supplied by the fact, that there is "an open area of about seven hundred feet in length, and three hundred feet in breadth; of which space about three hundred feet are constantly covered by stagnant water, winter and summer. In the part thus submerged there is always a quantity of putrefying animal and vegetable matter, the odour of which is most offensive." From several of the streets fever is never absent. Dr. Southwood Smith emphatically remarks on this locality, that "it seems to me to be perfectly in the condition of the wigwams of the vilest savages; they cannot be worse; we constantly hear of whole tribes of those savage people being swept away by fever, small-pox, and dysentery; and there is precisely the same thing constantly going on at Bethnal-Green. Whole families are swept away from precisely the same cause."\* Another instructive case may be cited. At the commencement of the Birmingham railway, at the back of Euston-square, there was formerly a lake of filth, which used to overflow at certain seasons. One hundred cows were kept there. A school containing a hundred and fifty children was contiguous; and in autumn various diseases annually invaded that school. Eventually, however, that lake was covered in; and since then those diseases have wholly disappeared.† The following observation of Dr. Southwood Smith is still more touching, by showing how the miserable defects complained of convert the poor man's cup of pleasure into deadliest poison:—"At the end of Wellington-row, and at right angles with it, a ditch, from eight to ten feet broad, extends nearly to the Hackney-road. In the greater part of its course, gardens, neatly cultivated, extend from adjacent houses to its edge; the stench arising from this ditch, at some seasons, is intolerable; the poor people inhabiting the neighbouring houses, while cultivating their little gardens with so much care as a recreation, and in the hope of promoting their health, little

\* Health of Towns Report, p. 6.

† Ibid., p. 34.

think, that at every moment they are inhaling a deadly poison. Yet so it is; the gardens go down close to this ditch, which is always sending up poisonous effluvia, giving them fevers: it is a most melancholy sight.”\* A case very similar to this is described by Dr. Baker, as having occurred at Derby. In a row of fifty-four houses, uniform in situation, size, and construction, and tenanted by the same description of persons, the inhabitants of the six centre houses were attacked by malignant fever; from which those who lived in the twenty-four houses above, and the twenty-four below them, altogether escaped. The tragedy of the six central houses was clearly owing to an open ditch at the bottom of the gardens, filled to overflowing with the contents of cess-pools and other filth, which was covered in both above and below, but left to vomit forth its pestilential miasmata opposite to the six ill-fated houses.† Another extract from Dr. Southwood Smith’s evidence shall be given, with a view to evince, that, by a General Sewerage Act, fever might to a great extent be got rid of. I may just premise, however, that it would be foreign to the objects of this paper to discuss the knotty question, what proportionate share malaria, a close and confined atmosphere, and destitution or depravity, have each respectively in the production of fever. “The records of the London Fever Hospital,” says Dr. Smith, “prove, indubitably, that there are certain localities in the metropolis and its vicinity, which are the constant seats of fever; from which this disease is never absent, though it may prevail less extensively, and be less severe in some years, and even in some seasons in the same year, than in others. So clearly is this the case, that, if you were to take a map, and mark out the districts which are the constant seats of fever in London, as ascertained by the Records of the Fever Hospital, and at the same time compare it with the map of the sewers of the metropolis, you would be able to mark out invariably, and with absolute certainty, where the sewers are, and where they are not, by observing where fever exists; so that we can always tell where the Commissioners of Sewers have not been at work by the track of fever.”‡ Open sewers are a great abomination, and prolific sources of disease. Dr. Corrie gives a repulsive account of Birmingham in this respect, and attributes the prevalence of fever in some districts entirely to open sewers and ditches.§ And here allow me to say, that the continuance of such a foul appendage as the open sewer, which obstructs one’s access

\* Health of Towns Report, p. 7.

† Local Sanatory Report for England and Wales, p. 166.

‡ Health of Towns Report, p. 1.

§ Ibid., p. 137.

to Kingston College, is rebuked no less by the scholarship of the place, than by its architectural beauties ! It would occupy too much time to trace the defective sewerage of most of our large towns, owing to the want of efficient laws. Let one specimen suffice. In Bradford, containing a population of about one hundred thousand souls, the majority being operatives in the stuff and woollen trade, there is no public drainage or sewerage at all. Every thing done in that way, which is most insignificant and defective, is done by private individuals. In fact, there is no sewerage worthy of the name. "The sewerage of the metropolis itself," says Mr. Chadwick, "though it is a frequent subject of boast to those who have not examined its operations or effects, will be found to be a vast monument of defective administration, of lavish expenditure, and extremely defective execution. The general defect of these works is, that they are so constructed as to accumulate deposits within them ; that the accumulations remain for years, and are at last only removed at a great expense, and in an offensive manner, by hand-labour and cartage. The effect is to generate and retain in large quantities before the houses the gases, which it is the object of cleansing to remove. Instances frequently occur of fevers and deaths, occasioned by the escapes of gas from the sewers into the streets and houses."\* And here I would remark, that while public health loudly calls for a General Sewerage Act, the interests of agriculture equally demand more effective arrangements than at present exist, to prevent an extensive waste of the refuse of towns and cities, and to secure its application, by irrigation or otherwise, to the neighbouring fields of production. Intimately connected with the present topic, is that of the sanitary effect of land drainage, which, if skilfully and effectively executed on a large scale in low and marshy districts, would not only promote the public health, which is greatly deteriorated in those districts, especially after such summers as the last, but would incalculably augment the productiveness of the soil, and the health of graminivorous animals.

We boast of our superiority to the ancients ; and, doubtless, an inductive philosophy, the art of printing, and our divine religion, have given modern civilization immense advantages over them. Still they were in many things so much our superiors, that we may advantageously borrow, even on this subject, not a few hints from antiquity. For example : The sewerage of London, wonderful as it is, is not only seriously defective, as I have

\* General Sanatory Report from Poor Law Commissioners.



already shown, but will not bear any comparison with that of ancient Rome. Accordingly, we are told, that "the Cloacæ, or common sewers, by Tarquinius Priscus, for conveying away the filth of the city, were worthy of the Roman greatness. These subterraneous channels were of considerable size, and constructed with amazing strength. Marcus Agrippa caused seven streams to meet together under ground in one main channel, with such a rapid current as to carry all before it. Sometimes, when these streams were violently swelled with immoderate rains, they beat with excessive fury against the paving at the bottom and the sides. Sometimes huge pieces of stone were carried down the channel, and yet the fabric received no detriment. Sometimes terrible earthquakes shook the foundation of the city, and yet these sewers still remained impregnable." "Such a quantity of water," says Strabo, "was introduced into the city, that whole rivers seemed to flow through the streets and sewers." But afterwards, as Laneïsi tells us,\* when the barbarians from the north pillaged and sacked the imperial city they destroyed the aqueducts, and by that act speedily depopulated Rome and its suburbs; for the water, spreading into the surrounding plains, formed marshes, which generated the most pestilential exhalations, while the refuse of the city accumulated in the common sewers, now utterly neglected. These two sources of disease were more effectual in destroying the population, than the arms of the barbarians. Not only had ancient Rome her magnificent aqueducts for supplying the citizens with wholesome water, and public baths, and for carrying off the filth of the city; but she had also her grand Appian, Flaminian, and twenty other roads, cut in straight lines for many miles together into the country, with a view to promote the circulation of pure air, and to furnish the inhabitants with the means of healthful exercise and recreation.

In ancient times, as is well known, it was the custom to BURY THE DEAD beyond the walls of towns and cities; and among the Greeks and Romans they were frequently interred by the way-sides. The origin of the objectionable custom of burying in churches or their vicinity, has been traced by Bingham, in his *Antiquities of the Church*, and ascribed to the idea of the protection, which would be afforded by consecrated ground, baptized bells, and relics. The reason alleged by Gregory the Great (which reason was afterwards transferred into the body of the Canon-Law) was, that the relations and friends of the dead, remembering those whose sepulchres they

\* *De Adventitiis Romani Cœli Qualitatibus.*

belied, might thereby be led to *offer up prayers for them*.<sup>\*</sup> As Protestants, our sympathies flow in less superstitious channels of thought. The late Mr. Coleridge, in contrasting the more rational custom of the ancients with the practice of the moderns, at least in Europe, in *depositing the dead within or contiguous to their places of worship in the very heart of our towns and cities*, beautifully observes, that "even were it not true, that tombs lose their monitory virtue when thus obtruded upon the notice of men occupied with the cares of the world, and too often sullied and defiled by those cares; yet still, when death is in our thoughts, nothing can make amends for the want of the soothing influences of nature, and for the absence of those types of renovation and decay which the fields and woods offer to the notice of the serious and contemplative mind. To feel the force of this sentiment, let a man only compare, in imagination, the unsightly manner in which our monuments are crowded together in the busy, noisy, unclean, and almost grassless church-yard of a large town, with the still seclusion of a Turkish cemetery in some remote place, and yet further sanctified by the grove of eypress, in which it is embosomed."<sup>†</sup> If the practice of interment of bodies in towns outraged a sentiment merely, we might pass it by as scarcely perhaps important enough to interest the regards of men of business. But that it pollutes the air and water of cities more or less, and makes the neighbourhoods of church-yards unhealthy, and that burying the dead underneath places of public worship frequently vitiates the air breathed by the congregation, are facts too well established to be called in question. Hence the preponderance of medical opinion is decidedly against the custom. I have not space for the overwhelming evidence<sup>‡</sup> which establishes its unwholesomeness. But I may remark, that the generation of noxious gases in this case both has a *morbid origin*, and occurs under the condition of a *limited supply of air*, thus furnishing a two-fold combination of circumstances favourable to their production and concentration. A sense of the danger to public health from accumulating corpses within towns and cities has led many of the continental nations, as France, Spain, and others, to abolish the practice. The two following historical facts illustrate the mode of operation of the noxious agencies thus put in motion. Sir James Macgregor states, in his account of the health of the British army during the peninsular campaign, "that, at Ciudad Rodrigo, there were twenty-thousand dead bodies put into the ground within the

\* Paris and Fonblanque, vol. i., p. 93.

† Coleridge's Friend.

‡ Vide Health of Towns (Effect of Interment of Bodies) Report, *passim*.



space of two or three months, and that this circumstance appeared to influence the health of the troops, inasmuch as for some months afterwards all those exposed to the emanations from the soil, as well as obliged to drink the water from the sunk wells, were affected by malignant and low fevers, and by dysenteries, or fevers frequently putting on a dysenteric character." In like manner Baron Humboldt mentions, in his work on South America, that, at Porto Bello and Carthagena, they bury the dead in the most careless and indiscriminate manner, and here and there trees are felled and allowed to remain a prey to vegetable decomposition. The consequence is, that the rays of the sun in a warm climate, falling on the materials of this double decomposition, produce animal and vegetable exhalations, which generate disease, and great numbers die.

The poisonous qualities of church-yard gases form an interesting subject of inquiry. The gases produced by putrefaction are carbonic acid, carburetted, sulphuretted, and phosphuretted hydrogen, and ammonia; the most deleterious of which are the compound gases of hydrogen. Few are now bold enough to maintain, that, in the decomposition of the human body, no principles are developed highly injurious to life. The affirmative side of the question is admitted almost universally. But the opinion, that the effluvia in question are not capable of generating the specific contagious matter of plague, typhus, and other pestilential fevers, is still held by many, principally on the authority of Dr. Bancroft, who decides against the pestilential character of these effluvia, chiefly on the ground of two extensive exhumations having been made, the one of a church-yard at Dunkirk, and the other of a cemetery at Paris, without producing any epidemic disorders, although the grave-diggers suffered severely from the usual consequences of so dangerous an occupation.\* But, not to dwell on the fact, that the great mass of bodies, which were exhumed on these occasions, had from great length of time been converted into the harmless and inoffensive substance called *adipocire*, there are considerations and facts of great weight in favour of an opposite conclusion. *In the first place*, there is strong reason for believing that some animal poison, specific or otherwise, exists in combination with the deleterious compounds of hydrogen. Sir Benjamin Brodie distinctly states his impression to be, that the sulphuretted hydrogen gas evolved by dead bodies has a peculiar odour, as if it carried some kind of animal matter or poison with it. Mr.

\* See Dr. Bancroft's Essay on Yellow Fever.

Alfred Walker, also, made some curious experiments on these gases obtained by boring a coffin, from which he demonstrated the presence of a subtle animal matter held in combination with the gases in a suspended form. *Secondly*, that dead bodies, *prior* to inhumation, frequently communicate to the living the specific contagious disease, of which the patient died, is a well-attested fact. Dr. Williams, in his able work on Morbid Poisons, relates the case of four students infected with the small-pox by the dead body of a man brought into the Windmill-street theatre, in London, for dissection, who had died of this disease. One of them saw the body, but did not approach it; another was near it, but did not touch it; a third, accustomed to make sketches from dead bodies, saw this subject, but did not touch it; the fourth alone touched it with both his hands: yet all the four caught the disease.\* *Lastly*, lest any should suppose, that inhumation will speedily extinguish the specific contagious poisons latent in a fresh corpse, I will adduce a few facts, which go far to shake the too sweeping conclusion of Dr. Bancroft from the results of the two extensive exhumations already mentioned. Thus Lord Brougham, (as I have been told on good authority,) while on a visit a few years ago at the Archbishop of York's, related the case of a pauper, who, being seized with cholera on passing through a village in the South of England, which proved fatal, was buried in a garden enveloped in a sheet. About six months afterwards, a gardener, who knew nothing of the circumstance, on trenching the garden, accidentally drew out this sheet from the earth. He was seized with the cholera a few hours afterwards, and died, although the previous circumstances were studiously concealed from him. Dr. Paris and Mr. Fonblanque also state, "that instances are on record, where the small-pox has suddenly appeared in a village after opening the grave of a person, who had, a few months before, fallen a sacrifice to that disorder."† But Dr. Farran, in his correspondence with the Select Committee on the Health of Towns, relates a still more striking and instructive case, which occurred at Eyam, in Ireland: "In this place," he writes, "the plague broke out afresh from the inadvertent opening of a grave, after a repose of ninety-one years, and cut off to the extent of four-fifths of the inhabitants of a populous town." Dr. Farran's comment on this fact is very emphatic: "It has been vainly thought," says he, "that when the body has been committed to the tomb, all disease will moulder with it. We have many instances to prove the con-

\* Williams's Elements of Medicine, vol. i., p. 210.

† Paris and Fonblanque's Medical Jurisprudence, vol. i., p. 93.

trary to be the case: even when it has lain for years, and returned to its kindred dust, on being disturbed and exposed to the air, the disease springs up, renovated, as it were, by the rest it enjoyed in the grave, to recommence its havoc."\* In perfect agreement with these facts is the following historical illustration. When Hannibal besieged the city of Agrigentum, "imagining that it was impregnable except on one side, he turned his whole force that way. He threw up banks and terraces as high as the walls, and made use, on this occasion, of the *rubbish and fragments of the tombs standing round the city, which he had demolished for that purpose*. Soon after, the plague infected the army, and swept away a great number of the soldiers, and the General himself.† The Carthaginians interpreted this disaster as a punishment inflicted by the gods, who revenged in this manner the injuries done to the dead, whose ghosts many fancied they had seen stalking before them in the night. No more tombs were therefore demolished."‡

When the putrefaction of *healthy* animal substances takes place *in the open air*, the noxiousness of the gases evolved is not so great, unless when highly concentrated, as when sulphuretted hydrogen gas is evolved in the after-processes of bone-boiling. Nevertheless so much suspicion, and more than suspicion,§ attaches to SLAUGHTER-HOUSES in the heart of a town or city, that, independently of the offence offered to our optic and olfactory nerves, and of the numerous fatal accidents occurring from the practice of driving cattle through the crowded streets, a sound and wholesome legislation ought to rid us of this nuisance also. "In all the best-regulated cities of Europe, the slaughter-houses are confined to particular situations, generally without the walls."|| Not that which is absolutely

\* Health of Towns (Interment of Bodies) Report, p. 208.

† Not Hannibal, but his General. ‡ Rollin's Ancient History, vol. i., p. 125.

§ "In August, 1817, a fever, possessing all the characters of typhus, broke out in a school at a populous town in Leicestershire. No instance of infectious fever had, for some months previously, occurred in that neighbourhood. Seventeen of the inmates of the establishment were affected so simultaneously, or in such rapid succession, as to leave no doubt of the origin of the disease from the operation of some local cause. Impressed with this opinion, the medical attendants were indefatigable in their efforts to detect the source of the infection; and it was, at length, found that a heap of putrid offal, the refuse of a neighbouring slaughter-house, had long been accumulating beneath the boundary-wall of the school-grounds. The stench which it emitted was intolerable; and the wind, for some weeks, had generally blown from such a quarter as to waft the noxious emanations directly across the spot where the ladies were accustomed to take exercise. None, except those who were so exposed, suffered *originally* from the infection. The source of mischief was immediately removed, and the fever became extinct, without spreading beyond the detached building in which it had originated."—*Dr. Palmer's Popular Illustrations of Medicine*, p. 210.

|| Paris and Fonblanque.



noxious alone, but that which renders life substantially uncomfortable, should be dealt with as a nuisance ; such as the various manufactories and occupations, during whose operation insufferably noisome gaseous effluvia are evolved, or whose waste liquids pollute the neighbouring springs and streams, or whose pursuit is necessarily accompanied with great noises.

The public suffer to an extent beyond all calculation from the SMOKE NUISANCE; and the great increase of manufactures has indefinitely augmented its intensity. Ammoniacal and other vapours from manufactories, sewers, and places of refuse, add to the general impurity of the atmosphere, caused by smoke. Chemical experiments on the air show but a trifling excess of carbonic acid gas ; but charcoals itself is deposited in abundance on our skins and linen. Societies for the suppression of smoke have been formed both at Manchester and Leeds, as you were told the other evening in the able address of your President. I need not repeat the curious facts which he mentioned, respecting the destruction of clothing, and extra expense of washing, from the effect of sooty particles in the air. You were also told of the facilities which exist for the combustion of smoke, and of the legal enactments available for the suppression of the nuisance. Another of the effects of a smoky atmosphere, is thus stated by Mr. Cubitt, the great London builder, in his evidence before the Parliamentary Committee : " I look upon it, it has this effect : A gentleman comes to London, and lives in London ; I will suppose he fits up his house in the best style he can ; he has a taste for good pictures and upholstery, and so on ; after a time the smoke has destroyed them, and he is disappointed and annoyed ; and the effect is, he is brought down in his feelings in a degree from the state in which he was accustomed to have things."\* But the effects of the smoke nuisance on health is the paramount consideration. There can be no doubt whatever that the effects of coal-smoke, but partially diluted by atmospheric air, are those of a very active poison. A case is related by Dr. King, in the *Edinburgh Journal*, of four sailors, exposed for fourteen hours in a cabin to air strongly impregnated with coal-smoke, in whom the symptoms were stupor and disinclination to rise ; and in three of them, when aroused, suffusion of the face, rigidity of the limbs, incurvation of the fingers and toes, feebleness of the pulse, and respiration, impeded and performed with sobs and a rattling sound. The fourth individual did not recover. In another case, of less intensity, related by Dr. Gardiner, in the *Edinburgh Medical*

\* *Health of Towns Parliamentary Report*, p. 207.

and Chirurgical Transactions, the principal effects of sleeping in a room of coal-smoke were giddiness, drowsiness, mental confusion, severe head-ache, and vomiting. It has been conjectured, that the vitiated state of the atmosphere, from this cause, tends to produce a morbid condition of the structure of the lungs, and favour the production of pulmonary consumption. It may be so; but another cause of exciting or aggravating diseases of the lungs, must not be lost sight of; namely, the granite dust generated in the Macadamized roads of our towns and cities,—an evil which ought to excite a strong feeling in favour of wooden pavements. One of the most delicate tests applicable to the subject of the effects of a city-atmosphere,\* is furnished by the disease called “child-crowing.” “A child, subject to spasm of the glottis, will have alarming convulsions when it breathes the air of a confined apartment in a large town. The convulsions cease when it is removed into the country, recur when brought home, and are again removed by a purer atmosphere.”† Another test, applicable to the subject, is the sickly state of vegetation in densely smoky towns, the more delicate species of shrubs perishing under its influence. “Ever-greens become never-greens; and a miserable existence of three or four years is the usual span of their lives.”‡

Very nearly akin to the results of the smoke-nuisance, is THAT DETERIORATION OF THE AIR BY CANDLES OR GAS-LAMPS at night-work, which is known to destroy the lives of milliners and tailors in great numbers by consumption, and other diseases of the lungs. The ladies of England should be told, that in London at least one-third of the over-worked milliners and dress-makers are destroyed by the defective ventilation attaching to their long and late occupation at night. The London life of tailors, too, is hazardous and wretched in the extreme. They are older in constitution at forty than the country workman is at fifty. They congregate in close workshops, from fifty to two hundred and fifty in number. The men at Allen’s, in Old Broad-street, are described as sitting nearly knee to knee; and what with animal caloric and the heat of the irons, the temperature of the room is twenty or thirty degrees higher than that of the air outside. Young men from the country faint from the heat and closeness, and in the coldest winter nights tallow candles melt and fall over from excessive heat. The depression felt in these circumstances calls for stimulus; and gin and beer supply the want of oxygen. The master tailors of London have lately shown a praiseworthy anxiety to better the condition of their

\* Health of Towns Report, pp. 39, 99, 103. † Mr. Thackray. ‡ Dr. Baker.



operatives, and have built an asylum on Haverstock-Hill for the relief of the aged and infirm; towards which one of their number, Mr. Stultz, has contributed the princely sum of £12,000. But though they have done this, and improved their workshops, they have much to learn before they become proficient in the great practical lesson, that sound and scientific measures of prevention are much more to the purpose than the most profuse almsgiving.\*

THE MALARIA ARISING FROM THE LUNGS OF PEOPLE CROWDED TOGETHER† operates as a poison on the inmates of close and confined schools, workshops, and manufactories. When this occurs in the crowded abodes of the poor, no means of separation exist when contagious diseases make their appearance. The dame-schools and day-schools in Liverpool are not the only samples of this class of abuses, but might be easily paralleled. Thus in the neighbourhood of Bolton, in Lancashire, there is a school in which "seventy scholars are cooped up in a badly-ventilated room, not twelve feet square." There are certain diseases peculiar to foundling and other establishments for children, the mortality of which is at times frightful, and the predisposing causes to which are impure air and improper nourishment. "It is important that all such establishments should have their windows constructed so that they can open to the floor: in any other form perfect ventilation is impracticable; the unchanged and impure air stagnates beneath the window sill, and must necessarily be breathed by the infants, whilst those of larger growth may not inhale it."‡ In some manufactories, as those of silk for example, the air, which is said to damage the silk fabric both as to colour and weight, is studiously excluded, to the manifest injury of the poor silk-weavers. The same is true also of cotton factories, the cotton spinning better in a close atmosphere.§ But to enter upon an inquiry into the specific effects of arts, trades, and professions on health and longevity, would open too large a field to be explored within the limits of an essay like this. Our views, therefore, must be general, and applicable to every class of operatives. From the mischievous effects, however, of the exclusion of air from the silk fabric on the health of the children of silk-weavers, who are the victims of scrofula, with softening of the bones, and its other wonted results, we may learn the paramount necessity of free ventilation to all classes. In fact, if ventilation and other essentials be properly attended to, there is nothing in the manufacturing system inconsistent with the health of the inmates

\* London Medical Gazette.

† Health of Towns Report, pp. 35—103.

‡ Dunglison's Practice of Medicine, vol. i., p. 35.

§ Ibid., p. 74.

engaged in the mills; but great defects exist at present in most of these establishments. Thus the height of the rooms in common use in our manufactories is not more than from nine to eleven feet, whereas it ought to be at least eighteen feet, to secure sufficient breathing-space for the workmen, and facilities for adequate ventilation. This latter improved construction actually obtains in Mr. James Smith's cotton-mill at Deanston, near Stirling; as also, I believe, in Mr. Ashworth's immense manufactory at Egerton, and his mill at Hyde. When the rooms are thus made sufficiently airy, and are well ventilated, the health of their inmates is excellent. Hence, from a due attention to sanatory regulations in the cotton factory of Walker and Co., in the village of New Lanark, the operatives are remarkably exempt from epidemical disease, and enjoy unusual health and comfort. The factory is contiguous to the river, and the most vigilant attention is paid to cleanliness, as it respects both the persons and the houses of the workmen. "Individuals are employed by the overseer to inspect the houses every week, and to mark those which are kept cleanest; and at the end of the season, a small premium is awarded to the first, second, and third families, whose dwellings are marked as having been kept cleanest throughout the year. This is a great stimulus to cleanliness, and is in a high degree conducive to the health of the villagers."\* It is gratifying to find that more enlightened views on this subject are beginning to prevail. I may instance the fact, that the inspectors of prisons in England allow one thousand cubic feet to each prisoner; whereas not long ago only one hundred and eight cubic feet of space were allowed to each inmate in the plans for workhouses, sanctioned by the English Poor Law Commissioners, and published in their first Report to Parliament. Dr. Motard, a French Physician of eminence, allows from 866 to 1039 cubic feet to each patient in an hospital, and directs that the beds be at least a metre or about three feet three inches apart.† Bearing in mind that air, light, and water are the simple but effective instruments of nature for securing us from the evils incident to a crowded population, how lamentable is the fact, that men have so long thwarted the purposes of the Divine benevolence by imprisoning one of these elements, excluding a second, and making a third stagnant and impregnated with impurities. So perverted, air and water more especially become the instruments of conveying to the abodes of human beings those noxious *miasmata*, which it is their proper function, when unrestrained, or subjected to judicious regu-

\* Local Reports, Sanatory Inquiry, Scotland, p. 242.

† British and Foreign Quarterly Medical and Surgical Review.

lations, to sweep away. So perfect, however, has the art of engineering become, that perseverance in these abuses would inflict an undeserved stigma on modern civilization. Nothing, for example, would be easier than, in any given case, so to construct a system of drains, as not only to prevent the escape of odour, but to annihilate its poisonous qualities by making the foul air pass through fire. Pure air, too, might be brought into the houses of confined courts and alleys, by having it propelled, as gas now is from the gas-works, through air-channels from the adjacent hills.\* The application of scientific principles to the removal of the decomposing refuse of towns greatly diminishes the expense. Thus Mr. Chadwick computes, that by the use of water and self-acting means of removal, by improved and cheaper sewers and drains, instead of by hand-labour and cartage, a clearance may be effected at a reduction of the expense to one-twentieth or one-thirtieth.

The necessity for PLAY-GROUNDS contiguous to the schools frequented by children is most obvious, and their value is strikingly illustrated by the case of Christ-Church Hospital, the health of whose eight hundred juvenile inmates, though in the very heart of London, I have ascertained to be surprisingly good. There is a school in Limehouse also with four hundred children, which, though placed in a densely-peopled part of the district, is equally healthy, owing to the advantage of a very spacious play-ground. But it is unhappily too common for schools to be built where, owing to the high price of the ground, they are deprived of this advantage. To be without them is, indeed, the rule; to have them, the exception. I could verify this remark by a reference to the statistics of London, Birmingham, Liverpool, Manchester, Glasgow, Bolton, Leeds, Hull, and many other places.† In some towns and cities, indeed, there has sprung up of late years a regulation for sending pauper children to a school out of town. Thus there is an excellent School of Industry at Norwood for pauper children from London, and another also at Little Chelsea, in connexion with the Workhouse of St. George's, Hanover Square. On the same principle a Convalescents' Hospital has been recently established in the neighbourhood of London, for the benefit of patients who recover badly in town. But if play-grounds are an essential appendage to schools, so are they to factories not built in open fields. And equally necessary is some park or open space for gymnastic exercises and recreation for the labouring classes of large towns. The enclosure of lands in their vicinity has seriously militated

\* Local Sanatory Reports, Scotland, pp. 11, 12.

† Health of Towns Report, pp. 102, 131, 140, 188.



against the physical strength of the people, who have now only the dusty or muddy roads to walk upon, or the pot-house to go to, as at Coventry, Bolton, and other places.\* It was an extraordinary oversight, that when these enclosures took place, no reservation whatever was made for the benefit of the working community. It is shrewdly observed by Mr. Ellison, that, "if the lower orders have not places where they can engage in sports, it is the very thing to drive them to Chartism." It is moreover certain, that their deprivation of the privileges enjoyed by their ancestors greatly annoys their feelings; † nevertheless, Manchester, Birmingham, and others of our very largest towns, are without these most necessary adjuncts to secure the health, and promote the hilarity, of the labouring poor. They ought, on the contrary, to be provided with commons or gardens, for the sake of purer air and invigorating exercise, as well as with public baths, ‡ which might be cheaply had in connexion with manufactories, for the purposes of health and cleanliness; but also museums, for the exhibition of natural curiosities and the productions of art, with a view to elevate their tastes and multiply their sources of innocent enjoyment. It is indeed a cheering fact, and an omen of further progress on the path of improvement, that the condition of these classes has been to some extent ameliorated, not only by an improved machinery generally, but also by the contributions of science in particular directions; as by Sir Humphry Davy's discovery of the safety-lamp, the application of the magnet to prevent the steel-filings reaching the lungs of knife-grinders, and in other specific instances.§ But legislation must keep pace with science, and insure the adoption of its various plans of protection, if we would bring an effective system of sanatory regulations to bear on their physical condition, and to co-operate with educational and religious efforts to raise them in the scale of civilization.

If we were to cross the Channel, and describe the miseries of the Irish poor, the recital would detain you until midnight. Suffice it to observe, as a tolerable index of the unhealthy state of Dublin, that in one year sixty thousand persons passed through the fever hospitals.

I here pause to remark, that a race of human beings subjected from generation to generation to the continued influence of the various agencies hostile to health and life, which have

\* Health of Towns Report, pp. 69—102.

† Ibid., p. 91.

‡ Ibid., pp. 59, 60, 183—185.

§ Vide Thackray on Arts, Trades, and Professions, as affecting Health and Longevity.

passed in review before us, must necessarily degenerate.\* And as the inhabitants of undrained marshy regions acquire a sallow visceral countenance,† which distinguishes them from those of the hilly district, the salubrity of which “is written on the rosy cheeks of each cottage child, and in the happy countenances and robust frames of the adult artisan;” ‡ so is the complexion of the operative classes of our large towns, for the most part, pallid and sickly. They do not and cannot enjoy *full* health; they are attacked by a variety of chronic § as well as acute disorders, and thousands of them are prematurely hurried into the grave. Mr. Chadwick tells us, that “the annual loss of life from filth and bad ventilation is greater than the loss from death or wounds in any wars, in which the country has been engaged in modern times.” He also affirms, that “the annual slaughter in England and Wales from preventible causes of typhus, which attacks persons in the vigour of life, appears to be double the amount of what was suffered by the allied armies in the battle of Waterloo.” ||

I cannot conclude the present series of observations, painful as they must prove to every benevolent mind, on account of the vast amount of misery which afflicts the operative classes, without deriving from them, when viewed in connexion with another more pleasing class of facts, matter of strong encouragement for the future. To an improved condition of the upper and middle classes in their habits of life, in clothing, in cleanliness, in a better ventilation, and in other prophylactics, we may reasonably attribute the diminished rate of mortality among them in our days, as well as the comparative mildness of the visitation of the cholera and other epidemics, as contrasted with the terrible invasions of former pestilences, such as the *sweating sickness* of the fifteenth and sixteenth centuries. That in those times vast numbers of the nobility, and half the inhabitants of many towns, (and not in seasons of scarcity either,) should have fallen victims to *the sweating sickness*, can excite no surprise, exposed as they were, by their pernicious habits of life, to those accessory causes of propagation, which are known to give augmented virulence to epidemic maladies. Thus, singularly enough, Erasmus, in a letter to Cardinal Wolsey’s Physician, actually attributes the occurrence of *the sweating sickness* to the filthy domestic habits of the people of England in those days. His language is very remarkable. “The floors,” says he, “are commonly of clay, strewn with rushes, which are occasionally renewed; but underneath lies unmolested an ancient collection

\* Health of Towns Report, p. 103.

§ Health of Towns Report, p. 11.

† Ibid., p. 37.

‡ Symons.

|| General Sanatory Report, p. 369.



of beer, grease, fragments of fish, spittle, the excrements of dogs and cats, and every thing that is nasty." \* Hentzner, too, tells us, that even the floor of the presence-chamber of Queen Elizabeth, in Greenwich Palace, "was covered with hay, after the English fashion." Happily the habits of those times have, not in aristocratic alone, but in all decent, society, long since passed away; and a marked security from the invasion of similar destructive epidemics has crowned a higher state of civilization. It is perfectly fair, therefore, to infer, that that comparative exemption from the worst forms of pestilence enjoyed at present by the upper and even middle classes of society, if referable to the prophylactic agencies alluded to, may eventually be secured to an almost equal extent by those neglected portions of the community, whose deplorable habits of uncleanness, and exposure to pestilential miasms, produce or aggravate their most formidable maladies. Mr. Chadwick is sanguine enough to believe, that by a judicious combination of all the arrangements called for to counteract existing evils, "it is probable that the full insurable period of life indicated by the Swedish tables (that is, *an increase of thirteen years at least*) may be extended to the whole of the labouring classes." † In short, the miseries of this generation will, in all probability, prove the very instrument of securing to posterity a larger amount of physical enjoyment than might have resulted from accommodations less thoroughly defective; just as the great fire in London, calamitous as it was to the immediate sufferers, proved to after-ages an event fraught with preponderating blessings, by causing a widening of the streets, and the influx of a fresher and more salubrious air. To those improvements has even been attributed, amongst other results, the disappearance of the plague; from the prevalence of which, during the previous century, London so severely suffered, that "there hardly passed any twenty years together (before its final visitation) in one of which it did not rage to such a degree that it could not be mistaken." ‡ But, of course, the sanguine anticipations which I cherish will be realized or not, just as some such effective scheme, as I shall attempt to trace in outline in my next Lecture, shall or shall not be carried into execution.

\* Erasmus, in "*Epistolâ ad Carolum Utenhovium*."

† General Report of the Sanatory Condition of the Labouring Population of Great Britain, p. 371.

‡ Collection of the Yearly Bills of Mortality, from 1657 to 1758. MDCCCLIX., p. 12.

## LECTURE II.

READ BEFORE THE SOCIETY, JANUARY 10TH, 1843.

THE case of the physical miseries of the industrious classes ought, indeed, to be a strong one, to warrant the proposal of such a comprehensive scheme of amelioration as it will be my business, towards the conclusion of this Lecture, to develop. A case as unanswerable as appalling, I cannot but persuade myself, was presented to your consideration at our last meeting. I then dwelt at great length, and with considerable minuteness of detail, on the gross abuses perpetrated by modern speculators in house-building, in the arrangement of streets and structure of tenements for the labouring poor in London, Manchester, Leeds, Liverpool, Glasgow, and other places,—on the defective sewerage of the suburbs of London and elsewhere, and its destructive effects on the health of thousands,—on the pernicious custom of burying the dead in churches and their vicinity, in the very heart of cities and large towns,—on slaughter-houses, and such manufactures and occupations as tend in various ways to militate against the health and comfort of the people,—on the smoke nuisance,—on the defective ventilation of certain workshops, and of manufactories generally,—and on the want of play-grounds for schools, and of parks, commons, or gardens\* for the exercise and recreation of over-grown communities.

\* “Mr. Joseph Strutt, of Derby, has presented to that town a public garden of eleven acres, which has been so laid out by Mr. Loudon as to give the advantages of a walk of two miles, and the interest afford by an arboratum, displaying the specimens of one thousand shrubs and plants. I am informed that his Grace the Duke of Norfolk has expressed an intention, as soon as some leases are out, to bestow fifty acres for the use of Sheffield, as a public garden. On the holiday given at Manchester, in celebration of Her Majesty’s marriage, extensive arrangements were made for holding a Chartist meeting, and for getting up what was called a demonstration of the working classes, which greatly alarmed the municipal Magistrates. Sir Charles Shaw, the Chief Commissioner of Police, induced the Mayor to get the Botanical Gardens, Zoological Gardens, and Museum of that town, and other institutions, thrown open to the working classes at the hour they were urgently invited to attend the Chartist meeting. The Mayor undertook to be personally answerable for any damage that occurred from throwing open the gardens and institutions to the classes who had never before entered them. The effect was, that not more than two hundred or three hundred people attended the political meeting, which entirely failed; and scarcely five shillings’ worth of damage was done in the gardens, or in the public institutions, by the work people, who were highly pleased. A further effect produced was, that the charges before the police of drunkenness and riot were on that day less than the average of cases on ordinary days.”—*Vide* General Report of the Sanatory Condition of the Labouring Population of Great Britain, p. 276.

While I showed how all classes of the community suffer, directly or indirectly, from the injurious operation of these and other defective arrangements, I demonstrated that they bear with most intense and concentrated pressure on the labouring population.

That the duty of an adequate protection of the industrious classes has been unconsciously neglected, is a proposition the reasonableness of which few will call in question. This can hardly amount to a reflection on those above them, as if they had wilfully steeled their hearts against the gentler influences of sympathy and compassion; but should it be so interpreted, the defence of the higher and middle classes, allowing for certain exceptions, to which I shall have occasion to refer hereafter, is not difficult. When the astonishing changes, which within the last forty years have swept over the entire face of society, owing to the sudden and vast increase of population, the congregation of swarming thousands in towns constructed at first for the convenience of a few hundreds, the application of machinery suddenly and for a time throwing numbers out of employ, the transition from war to peace, and monetary and other disturbing causes, are duly considered, the only wonder is, that the active philanthropy of the country, as embodied in religious and educational institutions, eleemosynary societies, local charities, hospitals, dispensaries, and legal provisions for the relief of the poor, have done so much to overtake their necessities. The hitherto imperfect medical police of this country may also be mentioned, as going far to account for the hiatus in our municipal institutions. By medical police I mean the application of the principles developed by medical science to secure the well-being of society. It is a most instructive fact, that a very considerable part of the institutions of the great lawgiver of Israel was a wise system of medical police. Moreover not a few pagan nations of antiquity adopted the same policy of associating the institutions of medical police with religious ceremonies, with a view more effectually to enforce the observance of the duties enjoined. Some of the continental nations, in our own times, more especially Austria, Prussia, Italy, and even France, have got the start of England in maturing a system of Hygiene independent of religious sanctions; and it is well known, that the mortality in Paris and other continental cities has diminished just in proportion as the public health has been protected by Hygienic measures. The object contemplated by Medical Police, (for the restoration and completion of which, both in theory and practice, we are mainly indebted to the Germans,) is so to meet and provide for the physical and even moral wants



of mankind as effectually to secure, under the complicated arrangements of modern society, their individual and social well-being. It addresses itself to the arrest of epidemics, the purification of the air of cities, the securing of a wholesome supply of water, the proper construction of streets and public buildings, an effective sewerage, the removal of nuisances, the scientific management of manufactories, workhouses, and prisons, and to various other matters affecting the public health. It is Medical Police, in short, "which can most effectually step in between capital and labour; and so guide and control public opinion, that avarice itself shall be made subservient to public improvement."\* The well-known success of sanatory regulations at sea, by which we have effected in the naval service a signal diminution of the mortality, which was formerly "more than double in amount of the deaths in battle" on that element, should undoubtedly inspire us with the utmost confidence in the resources of an efficient Medical Police, as brought to bear on those diseases prevalent on land, which result from the injurious arrangements of the present imperfect state of society. Let then medicine, which, to employ the language of Dr. Motard, "can alone untie the Gordian knots of modern civilization," let political economy and Christian philanthropy, combine to place at the disposal of Government their united resources.

The triumph of virtue over the degrading influences associated with pauperism is a moral spectacle, which throws into the shade the glories of martial prowess; and, in proportion to the extent to which it has been achieved, it rivets the claims of the suffering operative classes on our sympathy and support. As to their moral worth, in spite of the disadvantages with which they have to contend, let us hear the testimony of an upright and enlightened Physician, himself personally familiar with the character and habits of a dense manufacturing population. Dr. Lyon, in his treatise on the Medical Topography and Statistics of Manchester, remarks:—

"The habits of this large mass of people are, generally speaking, industrious and orderly, and influenced to a great extent by a deep sense of religious obligation. There are, of course, numerous exceptions from this remark, and, as in all large towns, abundance of profligate and abandoned characters are to be found: yet that the character above given is fairly deserved, might be inferred from observing the numerous places of public worship of every denomination in Manchester; the multitude of schools for the instruction of the young, and the

\* British and Foreign Quarterly Medical and Surgical Review.

extraordinary number of Sunday-scholars devoting their day of rest to the improvement of their minds; nor will a closer acquaintance with the people tend to lower them in the estimation of the observer. Their provident and thrifty habits are indicated by the many associations for mutual support, formed under the name of Friendly Societies; by the Building Clubs; and by the deposits in the Bank of Savings.”\*

Mr. Baird has recorded an equally favourable opinion of the working classes of Glasgow, although more numerous exceptions to that estimate might be taken in this case than in that of Manchester :—

“I have acted,” says he, “as Secretary to the Glasgow Relief Committee since March, 1837; and I have had, in various other capacities, occasion to know the working-classes; and I repeat, I have formed a favourable opinion of them. They are in general civil and industrious, and, in point of moral and mental worth, at least equal to the same classes in any other city or town I have visited.”†

I may adduce, also, the testimony of Dr. Chalmers, as that of a man familiar with the habits of the operative classes in Glasgow, in proof of the kindly dispositions which gild and warm the otherwise cold and cheerless scenery of want and woe. In his “Christian and Civic Economy of Large Towns,” he thus writes :—

“In the veriest depths of unmixed and extended plebeianism, and where, for many streets together, not one house is to be seen which indicates more than the rank of a common labourer, are there feelings of mutual kindness, and capabilities of mutual aid, that greatly outstrip the conceptions of a hurried and superficial observer. One who has narrowly looked to some of these vicinities, and witnessed the small but numerous contributions that pour in upon a family, whose distresses have attracted observation; and seen how food, and service, and fuel, are rendered in little from neighbours that have been drawn, by a kind of moral gravitation, to the spot where disease and destitution hold out their most impressive aspect; and has arithmetic withal for comparing the amount of these unnoticed items with the whole produce of that more visible beneficence, which is imported from abroad, and scattered, by the hand of affluence, over the district;—we say, that such an observer will be sure to conclude, that, after all, the best safeguards against the horrors of extreme poverty have been planted by the hand of nature, in the very region of poverty itself; that the numerous, though scanty,

\* North of England Medical and Surgical Journal, p. 20.

† Local Sanatory Reports, Scotland, p. 162.

rivulets which have their rise within its confines, do more for the refreshment of its more desolate places, than would the broad streams and supplies that may be sent forth upon it from the great reservoir and store-house of public charity.\*

In bespeaking your commiseration for the humbler classes, I am but re-echoing the sentiment which finds a voice in British legislation,—that the poor man is as much entitled to protection as the rich. Hence, in order to redress the grievances associated with poverty, the State may fairly be appealed to on the grounds alike of justice and of patriotism. The remark of Burke, that “a dominant system, under which the poor may be destroyed with impunity, is not a system of government, but an audacious conspiracy against the sacred dominion of justice,” is an abstract truth which may have been verified in the practice of some States, but which can never be predicated of the mild genius and parental character of the British constitution. No question affecting the rights of the people, whatever struggles it may have to encounter from the opposition of interested opponents, will ever fail either to command a patient hearing in Parliament; or, if the appeal be founded in justice and truth, to secure, eventually, a redress of the grievances complained of. The ease of the defective arrangements in our social economy to secure the public health and welfare, is too well attested by the irresistible evidence of facts, to break down under any weight of opposition, but must force its way to ultimate triumph. Public opinion, aided by the efforts of the press, has made itself heard with sufficient distinctness to compel the attention of our rulers, even if they had not shown they were beforehand with us by the appointment of Select Committees, who have presented us with Reports on the Health of Towns, and on similar subjects of public concern, worthy of the illumination of the nineteenth century. These are further corroborated by Reports on the Sanatory Condition of the Labouring Population of Great Britain, in consequence of an inquiry directed to be made by the Poor-Law Commissioners. The two great staple manufactures of this country, (the cotton and woollen,) employing, as they do, a larger amount of capital and more workmen than all the rest, and yielding a proportionate revenue to Government, may surely claim its protection for those industrious classes whose toils create the riches. The same plea may be urged on behalf of the manufacturing operatives generally. Besides, as the poor contribute, at least by indirect taxation, largely to the necessities of the State, and are liable to be called upon to defend it from

\* Christian and Civic Economy of Large Towns, vol. ii., p. 60.



external or internal aggression, the State owes them its protection in return. For, it should be borne in mind, that their understandings are not sufficiently informed to be able to appreciate all the insidious agents of sickness and death, which are in activity around them; and that, if they had the requisite knowledge, they have not the means of counteracting them. "Nature, meanwhile, terribly resents every violation of her laws, even though men sin ignorantly." The language of such penal inflictions, when rightly interpreted, is virtually a remonstrance with those who possess both the intelligence to note, and the power to avert, them, and a declaration that theirs will be the guilt of violated responsibility to God and man, if they neglect to interpose such remedial measures for the protection of those placed under their guardianship, as are suggested by the information obtained at the cost of so much misery and death. Patriotism, no less than justice, demands protective measures. For it would be easy to show, that the manufacturing system possesses within itself the elements of a fearful demoralization, if its native tendencies be not counteracted; inasmuch that the nation, whose greatness arises chiefly from her manufactures, has been well represented as "treading on gunpowder." But the State is interested in the welfare of our manufacturing population on other grounds also. It is no illusion of national vanity to say, that British labourers, well circumstanced, exceed in physical energy, and strength of will, the population of all other countries. The depressing effect of adverse sanitary circumstances on a class, whose mental and bodily energies constitute the very sinews of our national productiveness and wealth, ought, therefore, to be viewed with the deepest concern. But the manufacturing system, at least as operating under the influence of those adverse circumstances, works out a physical quite as surely as a moral deterioration. "I regard the factory system," says Dr. Baker, of Derby, viewing the subject professionally, and in reference to its existing state, "as producing the most extensive and the deepest-rooted injury to the health of the labouring population; because, beginning with childhood, and going on to youth, (in both sexes,) it breeds up puny parents of a future puny race, who, in their turn, perpetuate and increase the evil."\* It is on record, that at Mulhausen, once celebrated for a fine race of men, such is their deterioration, through the manufacturing system, that, for every one hundred conscripts found fit for military service, one hundred are rejected; and that at Rouen one hundred and sixty-six, and at Elbœuf one hundred and sixty-eight,

\* Local Sanatory Reports, England and Wales, p. 163.

are rejected for every one hundred passed.\* Thus, also, our own manufacturing towns are a bad nursery for soldiers; † as are some of the low, filthy, and fever-haunted districts in the vicinity of the river Thames, for sailors. The testimony of Mr. Moseley, before the Select Committee, demonstrates the latter of these facts: "I consider," says he, "that the state of these districts" (Shadwell and Rotherhithe) "is a matter of great national importance, from the very circumstance of their crews being taken from a neighbourhood so favourable to the generation of fever: it could scarcely be credited, that a neighbourhood so important to London, the first commercial city in the world, could have been in such a state of neglect, where there are no sanitary regulations for such an important population: the population that man the ships of this country, who may be taken on board the ships apparently in good health, and after they have arrived on board, and out at sea, as I know from numerous instances, fever has broken out in the ship, and has been propagated, as is undoubtedly allowed by all authorities in these districts. And sanitary regulations might have averted such evils." ‡

Large towns, viewed in the aggregate, constitute an imposing proportion of the whole nation. The mass of their population (as appears from Returns laid before the House of Commons) now amounts to nearly double the number of rural labourers, instead of being one-half, as was the case in 1790. The Population Returns show, that the whole population in Great Britain has increased, since the commencement of the nineteenth century, at the rate of nearly sixteen per cent. every ten years. But it has been much more rapid in large towns; for while in the country generally it has been about fifty per cent. in thirty

\* British and Foreign Quarterly Medical and Surgical Review.

† "The chances of life of the labouring classes of Spitalfields are amongst the lowest that I have met with; and there it is observed of weavers, though not originally a large race, that they have become still more diminutive under the noxious influences to which they are subject. Dr. Mitchell, in his Report on the Condition of the Hand-loom Weavers, adduces evidence on this point. One witness, well acquainted with the class, states: 'They are decayed in their bodies; the whole race of them is rapidly descending to the size of Lilliputians. You could not raise a grenadier company amongst them all. The old men have better complexions than the young.' Another witness, who says there were once men as well-made in the weaver-trade as any other, 'recollects the Bethnal-Green and Spitalfields regiment of volunteers during the war, as good-looking bodies of men, but doubts if such could be raised now.' Mr. Dace concurs in the fact of the deterioration of their size and appearance within the last thirty years; and attributes it to bad air, bad lodging, bad food, which causes the children to grow up an enfeebled and diminutive race of men." —*General Report of the Sanatory Condition of the Labouring Population of Great Britain*, p. 86.

‡ Health of Towns Report, p. 58, 59.

years, in some of our largest towns it has been nearly cent. per cent. In fact, it appears from these statistical returns, that the numbers in large towns multiply almost three times as fast as in the country. The proportion of manufacturing operatives must increase also, so long as England shall continue to be a manufacturing country. "Forty years ago," observes Mr. Robertson, "this island supported a population of less than eleven millions, and its arable surface was divided amongst perhaps as large a number of proprietors as it is at present. But how great the change in that brief period! About seven millions of inhabitants have been added to the then existing stock, a large proportion of whom are congregated in towns and villages, and depend for bread on the wages of labour. Unquestionably, therefore, new laws and regulations are become necessary for sanatory purposes in the civic government of towns. Every year shows, that upon the rich and the intelligent, especially upon the Christian, and, above all, upon the Christian Legislature, new and heavier duties are devolving." For such is the compact interlacement of the component parts of society, that, to appropriate a beautiful illustration from the Scriptures, "the head cannot say to the foot, I have no need of thee." In fact, the higher and middle classes suffer more than they apprehend from the consequences of unconscious neglect of the duty, which, on a full examination of the subject, they will find they owe to their poorer brethren. On this point the testimony of Dr. Southwood Smith, in his examination before the above-named Committee, is most emphatic. Speaking of the prevalence of fever in the crowded districts of the metropolis, and of its subsequent invasion of the great streets and squares, he asserts, that "independently of the large amount of money which the public have had to pay in the support of the sick, and of the families of the sick, pauperized in consequence of the heads of those families having become unable to pursue their occupations, they have suffered still more seriously from the spread of fever to their own habitations and families. It is notorious, that this disease was very prevalent during the year 1839 among the industrious classes, who never received parochial relief, and that it found its way even into the dwellings of the rich, where it proved extremely mortal. Generated in Bethnal-Green, in Whitechapel, in St. George the Martyr, in Lambeth, in Holborn, &c., it spread to the better streets in the immediate neighbourhood of these and similar places, and thence to still wider and more airy streets at a great distance, and ultimately to the most remote streets and the great squares." They suffer in their purses also, as well as in their health. The pecuniary cost of noxious agencies may be



measured by the public charge occasioned by a vast amount of vice and crime which come within the province of the police, as well as by the destitution which comes within that of the administrators of parochial relief.

I have based my advocacy of the claims of the industrious classes on legislative protection—upon their moral worth, upon the justice and patriotism of such protection, and upon their numerical importance, as a component and essential part of the commonwealth. But I am aware that the subject admits of another and less-pleasing view of it. Having in my former Lecture enumerated most of the *physical* evils, under which the labouring classes groan, let us now contemplate the *moral* consequences of the abuses in question on their character and feelings. And if the contemplation of them deduct somewhat from the complacency with which I have sought to inspire you towards the suffering poor, let the exhibition of the darker shades of the picture be allowed to prove the candour of my advocacy, rather than be wrested to establish against me a charge of inconsistency. So far, however, from this picture of the depravity of considerable portions of the working population weakening my appeal on behalf of the entire class, it rather strengthens it, if we only take into equitable consideration how much of that depravity is fostered by unfavourable circumstances. I am, moreover, desirous to relieve the delineation of purely physical wretchedness by such references to its degrading effects on the loftier attributes of human nature, as will strip the subject of an aspect of materialism, and will develop higher reasons than a regard for the health and comfort merely of the operative classes, why we should seek to ameliorate their condition, and raise them in the scale of social existence. I have already alluded to that stifled *discontent*, which predisposes large masses of the community to be operated upon by the subtle insinuations of the wily demagogue. “It requires,” indeed, as has been forcibly said, “but a glance at the turbid discontent of one large portion of our industrial populace, and at the sullen misery of another, to perceive that there is a gangrene of perilous character corroding the vitals of the people.”\* Long familiarity with all kinds of loathsome sights and stenches *outside* their miserable dwellings begets an indifference to cleanliness and neatness in the *interior*, which soon extends to their *personal* habits.† The want of self-respect, induced by a disregard for decency of appearance, forms a serious obstacle to their advancement in social respectability. For the struggle between

\* Symons on Arts and Artisans.

† Local Sanatory Reports for England and Wales, p. 312.

moral propriety and physical necessity ends too often in the sacrifice of character; and the motives to better their condition yielding to over-mastering circumstances, they fly to the gin-shop or alehouse, in order to get rid of their uncomfortable feelings in the oblivious dreams of stupefaction. Neglect of the necessities of life tends to degrade the character and feelings of children as well as of adults, and is found in practice powerfully to counteract the elevating influence of all educational and religious efforts on their behalf. With regard to the impediment thus offered to educational efforts, Mr. James Riddall Wood emphatically remarks, that "having attended very much to school tuition, and being accustomed to see the progress of children, my decided opinion is, that these miserable inconveniences at home have an effect in lowering the moral tone of the children, and in doing away with a great deal of the advantage they would otherwise receive at school."\* Dr. Alison writes to the same purpose respecting the baffled attempts to educate the children in the collieries of Haddingtonshire. Amongst the population of those collieries, destitution prevails in as aggravated forms as in the metropolis, and the children are found in a most disgraceful state of filth and rags. Again: when men and women, crowded together in close courts and alleys, are thus withdrawn from observation and the influence of good example, they are neither shamed out of vice, nor won over to the practice of virtue. Hence, as Mr. Chadwick tells us, "a large proportion of the cases of assaults and brawls, which occupy the attention of the petty sessions and sessions in towns, arise from the contentions among the inhabitants of courts and alleys, which are clearly ascribable to too close contiguity." Great moral degradation results also from the over-crowding of private dwellings; for a corruption of manners, which sets at naught alike the precepts of religion and the instincts of nature, is an inevitable consequence of both sexes thus living and herding together. Constant familiarity with sickness and death, in these wretched districts, often leads the people to abandon themselves to vicious indulgences with the most reckless avidity, and in the spirit of the pagan maxim,—“Let us eat and drink, for to-morrow we die.” “These adverse circumstances,” says Mr. Chadwick, “tend to produce an adult population short-lived, improvident, reckless, and intemperate, and *with habitual avidity for sensual gratifications.*”† I have elsewhere alluded to another dark vice, having its worst haunts in the crowded courts and alleys of towns and

\* Health of Towns Report, pp. 102, 134.

† General Report of the Sanatory Condition of the Labouring Population of Great Britain, p. 370.

cities, by which more women perish in this country than in any other.\* An acute observer of our social state has denounced it as "a flagrant stigma on the Legislature, that it has neither the courage nor the Christianity to take up this matter, and devise a national resource for these unhappy persons."† The vice of drunkenness, which, in northern latitudes, is the great bane of civilized life, is another of the moral consequences of the physical wretchedness of the labouring classes. A vast amount of evidence might be adduced to prove, that misery leads to spirit-drinking, while spirit-drinking as surely leads to misery. They act and re-act on each other. But it would be an outrage on truth to attribute all the drinking that prevails in large towns to actual distress. Many of the operatives receive a large amount of wages; and what might be saved from their expenditure in spirits would go a great way towards improving their condition in other respects. As one instance among many of the prevalence of this disgusting vice, I might refer to the village of Tranent in Scotland, in which there are twenty-six public-houses, and not more than six bakers' shops. In Glasgow, too, not very long ago, it is on record, that thirty thousand persons were to be seen every Saturday night in a state of brutal intoxication. But we are told by Captain Miller, that crime is on the decrease in Glasgow, both in amount and degree; and "the principal cause of the decrease," he thinks, "is to be found in the influence exercised upon the labouring part of the people by Temperance and Total Abstinence Societies." Mr. Baird also tells us, that "the Total Abstinence Society is the great engine which has chiefly brought about this most desirable reformation."‡ In truth, the rise and progress of those Societies create an era in the annals of human improvement, which no wise man will lightly estimate. But more remains to be done to abate the evil. And the ease of the uneducated classes, left an easy prey to the demoralizing and destructive agency of alcohol, by ignorance, and by the temptation to assuage their misery, ought to engage the attention of Government, with a view to some legislative check or other. Some of those baneful places of resort, gin-shops and gin-palaces, are scarcely ever closed. "They stand open to receive the latest wanderer by night; and again tempt with a treacherous warmth the earliest of those who repair to their morning's work."§ There is a no less curious than instructive piece of evidence furnished to the Select Committee by Dr. Arnott, who, to the question, "Do the lower

\* Health of Towns Report, p. 61.

† Symons's Arts and Artisans, p. 119.

‡ Local Sanatory Reports, Scotland, pp. 189, 192.

§ Thackray.



classes (of the metropolis) suffer much from want of fuel, or the uneconomical use of it?"—replies, "Yes; and having no fire at home, they go to a public-house and sit there; and many of them believe, that taking spirits internally warms them, and answers the same purpose as going to a fire: they think it a question, which of the two ways will warm them best, not deeming it more injurious to health to warm themselves in the one way or the other."\* The same Physician asserts, that the children of poor and drunken parents exhibit in their constitution the effects of their parents' habits, in their stunted growth and general appearance, and usually die prematurely. Mr. Alfred Walker also maintains, that, in the most neglected localities of London, the infected atmosphere has so depressing an effect on those exposed to its influence, as to involve the necessity of their taking stimulants, which in their turn increase the exhaustion. And he illustrates this opinion by the fact, that the grave-diggers, whose occupation is unwholesome and dangerous, from the pestiferous gases they inhale, generally drink. Now, without offering any apology for the vices which I have enumerated, I contend that we are bound, in justice to the unhappy victims of them, to allege not a few extenuating considerations on their behalf. This is, in fact, done by the Select Committee appointed by the House of Commons to inquire into the circumstances affecting the health of the inhabitants of large towns, in their Report of 1840:—"Independently," say they, "of the physical evils to the working classes, arising from the causes before adverted to, your Committee are desirous to express the strong opinion they entertain, confirmed by the testimony of many of the witnesses examined, that the dirt, damp, and discomfort so frequently found in and about the habitations of the poorer people in these great towns, has a most pernicious and powerful effect on their moral feelings, induces habits of recklessness, and disregard of cleanliness, and all proper pride in personal appearance, and thereby takes away a strong and useful stimulus to industry and exertion. The wife, hopeless of being able to make his home comfortable to her husband, abandons all endeavours for the purpose, neglect leads to neglect, recrimination follows reproof, and their children are brought up amidst dirt and wretchedness, with the example of constant domestic disputes before them. Nor can it be doubtful to those who trace the effects of such causes, that the humbler classes are often induced or driven, by the want of comfort at home, and by the gloomy prospect around, to have recourse to dram-drinking, the fertile parent of innumerable evils."

A still more painful and serious result is, when the pressure of these complicated calamities on the minds of men but partially or not at all enlightened on the subject of revealed religion, drives them into hard thoughts of God, and a blasphemous impeachment of his providence, or into absolute atheism. However deeply we may sympathize with the poor sufferers, yet, assuredly, the answer to all such infidel declamation concerning the incomprehensibility of the moral government of the world is easy, and consists in the simple reflection, "that these awful evils cannot long co-exist with a wise and humane government; and that mankind have no right to complain of Providence for evils, which they themselves are competent to remedy by mere common sense, joined with mere common humanity."\* Nevertheless, Christian Legislators should be alive to the possibility of such a frightful consequence, and anticipate or obviate it by removing the evils in question. That what I am suggesting is no idle conjecture, but at least a probable result, is proved by the existence, a few years ago, of a most active society of atheists in Glasgow,—a place, in which, if any where, the very intensity of misery would prompt to infidelity. Mr. Gillespie tells us, that this society of atheists numbered from two to three hundred members; many of whom were men of no little ability and information. The society employed its regular emissaries to go about the villages adjacent to Glasgow, to lecture on the Sundays. They corresponded with atheistical societies in England, and boasted that there were large associations of atheists in almost all the great manufacturing towns. Neither will it excite our surprise, that the same prevailing wretchedness should have predisposed numbers in our large towns for the reception of the doctrines of Socialism; or that that impious enthusiast, Robert Owen, should have taken every advantage of the existing evils of society to give currency to his gross delusions. Archbishop Whately informs us, that he has "ascertained the existence, among the labouring classes, of infidel clubs, reckoning their numbers by hundreds." And his Grace seems to ascribe the lapse of these portions of the community into infidelity both to the want of adequate Christian instruction, and to the attempt to supply its place by the glimmering lights of science. "It is a truth," says he, "which cannot be too strongly insisted upon, that if the powers of the intellect be strengthened by the acquisition of science, professional learning, or general literature,—in short, secular knowledge of whatever kind,—without being proportionately exercised on spiritual sub-



jects, its susceptibility of the objections which may be urged against revelation will be increased, without a corresponding increase in the ability to remove them." On the ground of these facts and reasonings he anticipates, at no distant period, "a destructive outbreak of infidelity."

In proposing any Remedial Scheme to rid us of these physical and moral evils, we are sure to be met by the interested cry of its expensiveness. Admitting an effective plan of legislation to be also an expensive one, to the nation as well as to individuals, is that a reason for scouting it? What! shall we vote twenty millions for the redemption of the slave population of our West Indian Colonies,—an act in all respects worthy of a great people,—and yet hesitate to come forward with a liberality commensurate with the necessities of our own industrious, but afflicted and wrong-enduring, operatives? But the edge of this objection may be further blunted by reflecting how many expenses a legislative plan, calculated to extinguish innumerable sources of pauperism, disease, sedition, and crime, will rid us of by thinning our poor-houses, hospitals, prisons, and penal settlements. "Not only," says Mr. Fletcher, in his evidence before the Select Committee, "a considerable saving of expense would undoubtedly arise from better sanatory regulations,—not only a saving in the poor-rate, and in the contributions to fever-hospitals, and other charitable objects; but, I believe, a saving would be effected in the present expenses of prosecutions, and in all the machinery necessary for the punishment of crime, which is generated as much by the filthy and miserable habits of those town populations, as by their ignorance." Moreover, could we once secure General Acts for the whole kingdom, in reference to building, sewerage, or any other subject, it would save individual parishes the enormous expenses inevitable on an application to Parliament for Local Acts. Legislation cannot, indeed, take one step in the matter without occasioning serious expenses, both direct, and in the way of compensation. Those might be met, as has been suggested by Mr. White, by an advance of money by Government to be subsequently re-paid by instalments. The costs of an extensive sewerage,\* procuring adequate supplies of water in arid districts, and other necessary improvements in crowded localities, would be very heavy in the first instance; although they would eventually reduce the public burdens beyond all calculation. An issue of Exchequer Bills, therefore, to be paid off in twenty years, by different instalments, making it payable out of the rent of the houses in a

\* Health of Towns Report, p. 122.



course of years, would facilitate matters, and meet the exigencies of the crisis. Or, if it were decided to meet the expense by a general tax on the inhabitants, such tax might be spread over a given number of years, and limited to a certain amount per year. Mr. Chadwick suggests, “that the oppressiveness and injustice of levies for the whole immediate outlay on such works upon persons, who have only short interests in the benefits, may be avoided by care *in spreading the expense over periods coincident with the benefits.*” The Select Committee on Health of Towns “think that wherever the Government, individuals, or any public body, shall be willing to provide a certain proportion (as one fourth or one-third) of the estimate of any Local Improvement, that there should be a power to enable the Commissioners (appointed under a General Act to aid Local Improvements) to raise a rate for the remainder.”\* Besides, as the evil is so general throughout the whole country, that the expense and the benefit would in the end be pretty equally divided, every separate class ought to bear its share of the national burden, in an enterprise so beneficial to the entire community. That the parties more immediately interested in a pecuniary way should object to innovations on their lucrative monopolies, is agreeable to all experience, from the time when the Ephesians perceived their “craft to be in danger” from the advances of a reforming Christianity, down to the present approaching conflict of philanthropy with avarice.† I will cite an instance of this spirit, by way of illustration. In Liverpool, where the Local Building Act merely goes to the length of directing the building of party-walls, and so on, there is no Act to provide for the adequate ventilation of houses. There was one attempted in 1802; but it failed, entirely in consequence of the opposition of the builders, and other interested parties.‡ But as in the execution of the laws of quarantine, so in this case also, both the avarice that would be eager to resist, and the ignorance that would be loath to obey, must be coerced into obedience to the resolute will of the majority, as legitimately expressed by a parliamentary decision. If drunkenness has slain its thousands, avarice has slain its tens of thousands. We need not go to Africa for proof of the fact, in the wholesale murders perpetrated by the slave-trade. Neither need we point to the inhumanities, which in times past have disgraced the factory system, our collieries, and other fields of human exertion. There is one pernicious mode, in which the passion for self operates to produce the wretchedness of thousands, which has not suffi-

\* Health of Towns Report, p. xxii.

† Ibid., pp. 133, 155.

‡ Ibid., p. 145.

ciently secured public attention and reprobation. I allude to the investment of capital in houses and streets, designed for the occupation of the poor, sometimes by speculative builders, sometimes by a wealthy class of individuals called cottage-owners, and sometimes by owners of factories. These tenements are often constructed by these several classes on the principle, that "the more worthless the houses,\* the larger the interest they will get for them."† (Of course the rule has many honourable exceptions.) They are built in the slightest and cheapest manner possible, without any regard to ventilation, without any drainage, without adequate outside conveniences, often with an imperfect supply of water, and in unhealthy sites, and on a marshy soil.‡ In London high rents constitute the great evil, with which the poor have to grapple, and in fact incapacitate them for enjoying other comforts. In Westminster more especially the practice of sub-letting grinds the face of the poor.§ Cottage-property is considered to be a most lucrative investment of capital in Liverpool. The whole of it nearly is exempt from all the local burdens;|| at the same time that, owing to its favouring the propagation of fever, it is the cause of great cost to the community. In short, in this low species of building speculation the only object contemplated by the projectors seems to be the amount of interest which they can realize on their invested capital, without the slightest consideration either

\* Health of Towns Report, pp. 68, 159.

† Ibid., 1840, p. 155. Evidence of T. Ashton, Esq.

‡ It has been objected to the construction of a better class of dwellings for the poor, that they could not afford to pay the difference of rent thereby occasioned. In answer to this objection, it may be said, that the improvement of character contemplated by the provision of better habitations, by making them better tenants, and more punctual in their payments, ought to operate in mitigation of the increase of rent. Moreover when it is considered how much the health of the labouring classes will be improved, and what a blow it will give to intemperate habits, we may infer that their savings will go far to meet a moderate increase of rent. Besides, the very appeal to the innate desire of human beings to rise in social respectability, will prove a stimulus to increased industry and economy. The testimony of Mr. Ashworth is most instructive on this point:—"In our own case, for twenty years, we have continued to make every successive lot of cottages more expensive and more convenient; and the most expensive cottages are the most sought after by our own people; and thus a man with a very moderate income will desire to bespeak beforehand the first opportunity of getting into a better cottage; and families who have obtained the privilege of a better cottage, when I inquired subsequently into their previous condition, they have scarcely been able to account to me as to what has been the inducing cause to their improved condition; but when questioned further, have acknowledged that the opportunity of putting better furniture into their houses has imperceptibly accumulated a large and valuable stock of furniture." Finally, there can be little doubt that a humane Government will co-operate with the promoters of better sanitary regulations by some remission of taxation on such articles as bricks, tiles, &c.

§ Health of Towns Report, p. 50.

|| Ibid., p. 145.

for the health or comfort of the wretched tenants. "The working classes," says Dr. Williamson, "are now exposed to the enpidity and defective arrangements of their landlords, and they appear to me to require the protection of some general Building Act to remedy the evils." Drs. Arnott and Kay also, in their Report on the prevalence of certain Physical Causes of Fever in the metropolis, remark, that "*many of the most recently erected suburbs of our great cities, exhibit so complete a neglect of the most common and obvious precautions, that it can be attributed only to the fact of the increase of the population being so rapid, that the owners of such property can command tenants, notwithstanding the absolute neglect of sewerage, and the absence of many precautionary arrangements absolutely necessary to insure health.*" Mr. James Riddall Wood states, that in Liverpool houses built back to back are very much on the increase; and no wonder, because "it is a very profitable description of property."\* Another example in which avarice tramples upon health, is the following. The want of an intermixture of the more respectable classes among the poor, in certain districts of London, has led to the building of some most pernicious manufactories in the very centre of their humble abodes, especially those for bone-boiling. There are three of them in Lambeth, and four in Christ-Church. Size and other materials are extracted from the bones, which latter, after they are boiled, are used for the purpose of manure.† Their decomposition is expedited by throwing quick-lime upon them, which extricates sulphuretted hydrogen gas in immense quantities,—a gas exceedingly pernicious to the health of the neighbourhood. In fact it is so noxious, that the admixture of one part in five hundred of atmospheric air is fatal to the person who respires it.‡ Now if these manufactories were built in a wealthier locality, they would at once be indicted for the nuisance. But, in the existing state of the law, which makes the expenses of a law-suit too onerous for the poor to sustain them, advantage is taken of their poverty to create wealth at the expense alike of their comfort and health.§ Another injurious way in which avarice operates, is in the fictitious and extravagant value which it creates in land under certain circumstances. For as land becomes more valuable in a densely-peopled town, the temptation is stronger to build the houses closer together, as well as to abridge their size.|| In all these cases, respect is no doubt secured by law to the

\* Health of Towns Report, p. 129.      † Ibid., pp. 54, 58, 59.

‡ Health of Towns (Interment of Bodies) Report, p. 130.

§ Health of Towns Report, p. 60.      || Ibid., p. 152.



sacred rights of property. There is, indeed, such a thing as justice to individuals, and it constitutes one of the foundation-stones of our British social edifice. Nevertheless, respect to those individual rights needs to be qualified and restricted by the equally authoritative social maxim, itself a relic of antique morality,—

*Sic tuo utere, ut alienum non lædas.*

In short, the vested rights of individuals ought never to outweigh the public welfare.\* Thus guarded, the rights of property tend to the ultimate advantage of all parties; and we may hopefully reckon upon the period as not distant, when a Christian Legislature will put the necessary checks on avarice and ignorance, whether private or parochial, in diffusing for the benefit of all classes the unrestricted enjoyment of air, light, and water. The same plea for the necessity of interference with private property, (namely, the general good,) “is constantly held to justify similar interference, in various Acts of Parliament, for the construction of roads, railways, canals; and in the enforcement of regulations regarding police, quarantine, &c.” † In point of fact, public opinion has already demanded and to some extent secured legislative interference for the protection of young children, alike from parental cupidity and the avarice of their employers, in the case of those excessive factory labours, which both impaired their health and deprived them of the advantages of education. An equally humane interference of the Legislature occurs in the Act passed for the Regulation of Chimney Sweepers and Chimneys, the minute directions of which, as to the size of all the chimneys and flues hereafter to be built or rebuilt, furnish a direct precedent for the principle of a General Building Act. Moreover, the readiness evinced by Parliament, during the last session, to co-operate with Lord Ashley in his noble efforts to redress the grievances of women and children in collieries and other fields of human labour, is an encouraging omen for the success of future efforts to secure legislative protection for the labouring classes generally. If person and property be protected by British law, why not *health*,‡ which gives to the two former whatever value they possess? Most assuredly our legislation will admit of great additions in that direction, so that the preservation of the public health shall be a more prominent element therein than heretofore. But, in the conflict with physical and moral evil, our final appeal is to the fears of the sordid and interested, who ought to be told, that the public safety demands individual sacrifices. In truth, unless some

\* Health of Towns Report, pp. 101. 152.

† Ibid., p. xvi.

‡ Ibid., p. 136.

remedial steps be taken to abate the misery of the mass of the working classes, and that speedily, civil convulsion must ensue, as the climax of these horrors. For, as has been eloquently said, "unless the base of our great social pyramid be firmly cemented, the column and the Corinthian capitals must soon crumble in the dust."\* To this conclusion the Select Committee on the Health of Towns themselves arrive, when they state, "that, ultimately, a great saving to the community will take place by the remedial measures they propose; but that, even were that not the case, some such measures are urgently called for as claims of humanity and justice to great multitudes of our fellow-men, and as necessary not less for the welfare of the poor than *the safety of property and the security of the rich.*"† It is well known, that many of the great cities and states of antiquity were overthrown by the overwhelming evils attendant on a luxurious state of society, which were not met by a corresponding moral and physical counteraction. The present age is extremely favourable to the attempt at a more successful resistance of the same or analogous agencies of national decline, owing to the superiority of our divine religion, a more successful development of the physical sciences, and a more perfect knowledge of medicine. And here I may be allowed to remark, that no sober observer of our social state, if he have visited the abodes of the industrious classes in large towns, can contemplate the probable reduction in the price of timber, from the operation of the new tariff, without thankfulness for so powerful a physical counteraction of that corruption of manners, which results from the promiscuous intercourse of both sexes and all ages. It is scarcely possible to imagine a happier coincidence in legislation than such a reduction in the price of timber, in connexion with a General Building Act suited to the wants of the crisis. We are reminded, by these bright anticipations of the future, of Laing's impressive statements and descriptions respecting the habitations of the poor in Norway, with their separate apartments, divided and subdivided, so as to meet all the requirements of health and a superior morality.

Dr. Southwood Smith very properly insists on the importance of efficient MUNICIPAL REGULATIONS, that the authorities may be armed with sufficient powers to interpose for the benefit of the industrious classes. "It appears to me," says he, "a thing clearly requiring *legislative interference*; it is a matter in which the poor people cannot, by any forethought of their own, guard against the evil; these poor people must take

\* Local Sanatory Reports, Scotland, p. 193. Mr. Baird's Paper.

† Health of Towns Report, p. xiv.

cheap tenements, and these houses may be placed on marshy ground, with no drainage of any kind, no means of carrying away filth, and they cannot help themselves, though they are placed in the midst of the focus of fever perhaps, or of certain other diseases, which incapacitate them for pursuing their labours; and thus they are thrown upon the parish, and grievous evils produced." And again he remarks, elsewhere, "If in the metropolis unions, which alone include a population of eight hundred and fifty-one thousand souls, it be certain, that conditions exist which are absolutely incompatible with the public health, and which conditions are, to a very considerable extent, removable; and if it shall be found that similar conditions exist in all the large towns in Great Britain, here would seem to be a proper and legitimate field for *the exercise of legislative wisdom and power.*" The demand for the superintending parental care of Government is still more evident, if we reflect how many causes conspire to withdraw the educated and wealthy from immediate proximity to the close and crowded habitations of the labouring classes; many of the former even locating themselves at a distance in the country, owing to the facilities of locomotion furnished by railroad conveyances. Who, for example, on surveying the villas and pleasure-grounds for several miles around the town of Liverpool, the general aspect of the buildings in the better parts of the town, and the external signs of prosperity exhibited in its magnificent docks and warehouses, would not sigh over those neglected localities and abodes of misery, to which I have already adverted? The municipal system of the kingdom, whether we view the Commissions under Local Acts, or the operations of the old corporate system, has so outgrown the circumstances which called it into existence, and yet is so inadequate to meet the wants of a state of society, in which

"Such revolutions in our time have been,  
No traces of antiquity are seen,"

that it must be evident to all, we need fresh regulations of the most comprehensive character.\* In olden time, all municipal powers were vested either in the corporations of towns, or in manorial jurisdictions of the country. Many of the towns possessing ancient municipal constitutions have become places of such size, with such a teeming population, and embracing such varied interests, that the old regime has worn itself threadbare. Under some of the manorial jurisdictions, also, some of our densest manufacturing populations have sprung up, as those of Manchester, Birmingham, Bolton, and others, which have so strongly felt,

\* Health of Towns Report, pp. 93—95.



in common with the preceding class, the pressure of urgent necessity for better regulations than obtained under the old system, that at different times they have petitioned and obtained from the Legislature certain Local Acts for the redress of partial grievances. "The consequence is, that the territorial extent of the jurisdiction of the Commissioners under Local Acts is often exceedingly arbitrary, and, in some instances, perfectly absurd; for they include, perhaps, only the centre of a town, or but part of its suburbs, or only half a town." Nor does the Act for the Amendment of Municipal Corporations wholly repair these defects; for it confers on none of these municipal bodies a power to demand the authority now exercised by the co-existent Boards under Local Acts. Meanwhile, these Commissioners under Local Acts, whether in the old or new towns, possess no powers at all equal to the emergency. Under these circumstances there manifestly exists a deficiency, both of the powers to be exercised, and of proper authorities to exercise them. For while the changes which have taken place in the municipal system of the country by the alteration of the Poor Laws, and in that of towns by the Act for amending the Municipal Corporations, have more accurately defined municipal duties, and economized the administration of municipal resources, no provision has been made for the discharge of many anomalous duties, which were formerly discharged irregularly. The want thus created by abortive attempts to re-organize the whole system, is indefinitely augmented by the multiplication of the necessities of modern society, more especially in reference to sanatory purposes. The imperfect machinery of what are called Courts Leet, with their "annoyance juries," for every manor and every town,—who annually present every thing obnoxious to remark, as a nuisance, which comes to their knowledge,—is legible in those thousand standing violations of the law, which they were designed to suppress. Moreover, while our municipal bodies cannot interfere with the exercise of the powers wielded by co-existent Boards under Local Acts, the Commissioners under those Acts, whether in the old or new towns, possess, as I before remarked, no powers at all equal to the emergency. A few cases, by way of illustration, will place this remark beyond the reach of objection. Thus the Commissioners of the Local Act obtained for Bradford have no power to take down a single building, or widen a street, or put down a drain. The Liverpool Building Act, as I have already mentioned, merely directs the building of party-walls, and cannot touch the subject of ventilation. The principal provisions in the Building Act for London are to insure the thickness of

party-walls for the prevention of fire, and to regulate projections into the streets. Those for Liverpool and Bristol, also, are chiefly restricted to the prevention of fire. The Commissioners of Sewers in London and elsewhere, on constructing a common sewer in a marshy and unwholesome district, can in no case compel the owners of houses to open a communication with it by private underground drains. Neither have they any power to prevent receptacles of filth being laid down below the level of the common sewer. The Commissioners of Pavements have no power to examine the interior of houses, and the state of the drains, which should rid them of their impurities. In Dublin the Commissioners of the Paving Act can compel the owners of dwelling-houses to communicate with the common sewer by underground drains; but having no right of entry, they cannot ascertain the fact; and hence the law is scarcely ever enforced. Many important streets in our large towns continue to be disgraceful nuisances, because the law forbids any street to be paved or sewered without the consent of the owners of property, unless a certain large proportion of the land on either side is built upon. But I need not further multiply proofs of so self-evident a proposition as this, that, owing to the imperfection and impotence of our existing municipal regulations, in reference to sanitary purposes, throughout the kingdom, we need "the enactment of some system, which shall give to constituted authorities a complete, systematic, universal, and perpetual power for municipal regulation, by which the public could secure the cleansing, draining, and paving of the streets, and the proper construction of dwelling-houses, both upon a good ground-plan of the streets, and upon a structure, which shall secure to each house all the first requisites of health."\* The "Building of Small Tenements Bill" may doubtless effect something; but we want a General Building Act with more comprehensive provisions, a General Draining Act, and other general regulations to secure the health and comfort of the inhabitants of large towns. When I speak of a General Building Act with more comprehensive provisions, I mean the adoption of some such regulations as are suggested by the Select Committee on the Health of Towns; namely, "to forbid such specified forms of construction as cellar-dwellings, unless with areas in front and back, and with sewers below the level of the floors;—as rows of houses erected in close courts built up at the end, and as rows of dwellings built back to back, so as to prevent any thorough

\* *Vide* Health of Towns Report, 1840. The evidence of J. Fletcher, Esq., p. 93—95, is most instructive on the defects of our municipal system.

ventilation ;—also to require that before and behind every row of houses of this description a certain space should be left open proportioned to the height of the houses ;—to insure, moreover, such conveniences as are absolutely necessary for health and decency, and such receptacles for refuse, ashes, &c., as cannot be dispensed with consistently with cleanliness and comfort. Finally, there should be a sufficient under-ground drain communicating with the common sewer.”\* These regulations would be of a preventive character, and would not otherwise interfere with the discretion of builders. Above all, we want efficient Boards of Health, armed with a power to inspect nuisances, and remove them. For our chief reliance, after all, must be on “an efficient preventive and effective machinery.” I will mention one case, which illustrates the want of Boards of Health. It is that of the Surveyors of Sewers in London, who report quarterly to the Commissioners of Sewers. But their inspection goes only to the general state of the sewers, and the prevention of any thing impeding them. It is no part of their duty to report on the state of the sewers or open drains, as affecting the health of the inhabitants. There should be the power to compel the interment of the dead at a distance from towns, and on the north side, after the French fashion, for the sake of dry winds ;—to secure a good supply of water to each house, as well as for the cleansing of the streets ;—to insure for crowded communities some open spaces being preserved for exercise and recreation ;—to regulate lodging-houses† for the reception of mendicants and others ;—to establish public bathing-places for the use of the poorer classes ;—to open up thoroughfares in dense secluded localities, which now constitute a complete refuge for criminals of every description ;—to break up arched entrances into courts ;—to promote the improvement of fire-places in the houses of the poor ;—in short, to do and promote many other things essential to an improved system of sanitary regulations. It would be expedient, for example, “to establish some summary jurisdiction, by which fumigation, whitewashing, and other cleansing operations, and the burning of infected clothes, might be effected without delay, whenever the prevalence of a contagious disease required it.”‡ There is no power at present to compel landlords to cleanse and whitewash houses, that have been infected with fever. Even Fever Boards have often been defeated in their attempts to enforce this most

\* Health of Towns Report, p. xv., 36, 113, 114, 118, 117, 115, 198.

† Ferriar's Medical Histories, 1792, vol. i., p. 141 ; also Local Sanatory Reports for England and Wales, p. 318.

‡ Paris and Fonblanque, vol. i., p. 142.



necessary process. The importance of such a power being lodged somewhere will appear, when it is known, that a house charged with the poison of typhus, though shut up for months and even years,—no attention having in the interim been paid to cleansing or whitewashing,—will communicate the disease to its very first inmates. In Ireland, indeed, owing to the almost constant prevalence of fever, they possess extraordinary powers for cleansing and whitewashing lodging-houses, in the event of fever or other contagious diseases prevailing. Finally, there should be “A General Act to aid Local Improvements,” which should enable the authorities of cities and towns to do whatever they deem essential to the welfare of the public; such as the regulation of the width of new streets, the removal of single houses or parts of houses with a view to ventilate close courts, the shutting up or pulling down of ruinous houses, and the adoption of one of the later continental improvements, that of providing *abbatoirs* at a distance from towns, as at Rome, where formerly slaughter-houses were a great nuisance, but which by this new arrangement is now entirely abated in that city, as well as in many other towns on the continent. New towns should be built, as, I believe, they now are in the United States, according to a pre-arranged plan with regard both to the buildings and sewers. The gradual filling up of the outline, and completion of such a plan would be far less expensive than the cost of the patch-work additions and modifications so often called for in our great towns, to make them answer the public convenience.

A great change has taken place in the national tastes of this country during the last twenty or thirty years. The passion for war has ceded to a love for the pursuits of philanthropy. Even during the epoch of the most brilliant successes of our arms, a class of philosophers and statesmen was in training, to be hereafter employed by Providence in developing a higher degree of civilization. When peace came, our revived and enlarged intercourse with the rest of Europe brought the experience of the continental nations to bear on the civil economy of Great Britain. A breathing-time from political excitement having, moreover, re-visited us, we now behold science, legislation, and religion, combining to achieve the successive conquest of every foe to the interests of humanity. As the result of this movement, we see every where new agencies at work, and zealously co-operating with our older philanthropic institutions, in prosecuting this glorious warfare with physical and moral evil. Witness the rise and growth of “the British Association” for the advancement of practical science, the formation of statistical

societies in various parts of the kingdom, and the turn which legislation itself has taken in the prosecution of those arduous inquiries, the results of which principally form the substratum of the remarks submitted to your consideration. In the mean time, no philanthropist can withhold from Lord Ashley, the late Mr. Sadler, and other patriotic and Christian-minded Statesmen, the tribute of his applausé for their unwearied, and, to some extent, successful, exertions in the cause of humanity. Nor can I refrain from making honourable mention of that eminent, though somewhat eccentric, philanthropist, Richard Oastler. It would be unjust and ungrateful also, not to mention, with high approbation, the Marquis of Normanby, and Mr. Buckingham, whose projected Bills would have accomplished important sanatory improvements in our large towns. But what we want is, a comprehensive scheme of municipal regulations, which shall embody the principal plans of amelioration suggested by them, as well as by other enlightened and patriotic Statesmen and philanthropists. The subject must come before Parliament in its approaching session; and we may confidently anticipate the adoption of such legislative measures as will demonstrate the practical wisdom and humanity of that august assembly. British Statesmen must feel their awful responsibilities at this crisis of their country's history; whether they contemplate the convulsive heavings of our social and political system, or the rapid advances of population at home, and its onward march through our colonial possessions in North America, the East and West Indies, and Australia. For, if we include the United States, "in two or three centuries hence," as it has been well observed, "a larger population than now exists in the whole of Europe, speaking the British language, will curse or bless their father-land, as we shall have given a bias for good or evil to their infant institutions."\* The day is at hand, when the deliverance of most of our industrious population from a yoke of bondage heavier than ever weighed upon the spirits of a free people, will be achieved; and when they will pride themselves on being the inhabitants of a country "pre-eminent in arts, illustrious in the triumphs of science, glorious in the walks of literature, powerful in the panoply of wealth, and the gift of civilization,"† and, withal, prodigal in her efforts to secure to all classes not freedom merely, but that amount of health and comfort, without which other and higher bestowments too often fail to accomplish their purposes of amelioration. Religion, Education, Temperance Societies, and Poor Laws, aided by other eleemosynary institutions, may do much to overtake the career

\* British and Foreign Quarterly Medical and Surgical Review. † Symons.

of demoralization ; but, without the vantage-ground of some such improvements in our social state, as it is the object of this paper to develop, they will have to struggle with disadvantages calculated powerfully to obstruct, not to say defeat, their combined attempt to achieve the regeneration of society. Let it not be imagined, however, that, though many of the vices of the operative classes, and especially the infidelity which partially prevails among them, have been greatly promoted, if not produced, by physical wretchedness, I therefore conclude, that physical sources of happiness alone, and unassisted by moral and religious influences, will suffice to counteract them. While Protestant Christianity, with her characteristic benevolence, neither withholds from the industrious classes the free enjoyment of the refined pleasures of knowledge and science, nor seeks to check population by the imposition of monastic austerities, she nevertheless assigns to physical sources of enjoyment but a secondary, though an avowedly necessary, place in any well-defined scheme of remedial agencies. But it is a capital error to maintain, at such a crisis as the present, when there are so many indications that we are on the verge of "a destructive outbreak of infidelity," that the diffusion of science, aided by those improvements in our social state, on which I so strongly insist, will prove a panacea for the ills of society. Religion must go hand in hand with science, and its healing influences pervade those neglected masses of our population, which have been predisposed, some by their physical wretchedness, and others by too exclusive a training of their minds in secular knowledge, for the reception of the lessons of infidelity. The remark of Dr. Chalmers is equally forcible and just, that "so long as the people remain either depraved or unenlightened, the country never will attain a healthful condition in respect of one of the great branches of her policy. This is an obstacle which stands uncontrollably opposed to the power of every other expedient for the purpose of mitigating the evils of a redundant population ; and, till this be removed, Legislators may devise, and economists may demonstrate as they will, they want one of the data indispensable to the right solution of a problem, which, however clear in theory, will, upon trial, mock the vain endeavours of those, who overlook the moral principles of man, or despise the mysteries of that faith which can alone inspire them." \*

\* Chalmers's *Christian and Civic Economy of Large Towns*, vol. i., p. 10.

THE END.



For the purpose of the present investigation, the following data were obtained from the records of the Bureau of the Census, Department of Commerce, for the years 1910 to 1920, inclusive.

Year	Population	Area	Population per square mile
1910	92,228,496	3,681,000	24.9
1920	106,000,000	3,681,000	28.8

The following table shows the population of the United States in 1910 and 1920, by age and sex.

Age	Sex	1910	1920
Under 15	Male	20,000,000	21,000,000
	Female	19,000,000	20,000,000
15-24	Male	15,000,000	16,000,000
	Female	14,000,000	15,000,000
25-34	Male	12,000,000	13,000,000
	Female	11,000,000	12,000,000
35-44	Male	10,000,000	11,000,000
	Female	9,000,000	10,000,000
45-54	Male	8,000,000	9,000,000
	Female	7,000,000	8,000,000
55-64	Male	6,000,000	7,000,000
	Female	5,000,000	6,000,000
65-74	Male	4,000,000	5,000,000
	Female	3,000,000	4,000,000
75-84	Male	2,000,000	3,000,000
	Female	1,000,000	2,000,000
85 and over	Male	1,000,000	2,000,000
	Female	1,000,000	2,000,000
Total	Male	70,000,000	77,000,000
	Female	62,000,000	69,000,000
Total		132,000,000	146,000,000